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A

NEW DICTIONARY
OF
NATURAL HISTORY;

OR,

COMPLEAT UNIVERSAL DISPLAY

OF

ANIMATED NATURE.

WITH

ACCURATE REPRESENTATIONS

OF THE

MOST CURIOUS AND BEAUTIFUL ANIMALS,

ELEGANTLY COLOURED.

By WILLIAM FREDERIC MARTYN, Esq.

IN TWO VOLUMES.

VOLUME THE FIRST.

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P R E F A C E.

IT is the peculiar glory of the present age, that Science has not only flourished, but been pursued to her last retreat. The most unpropitious climes have been explored; and neither the polar frosts, nor the tropic suns, have been able to impede the daring spirit of discovery. New countries, replete with objects before unknown, have been added to the terraqueous globe; and, as these researches have been systematically pursued by men eminent in every branch of literature, the Astronomer, the Geographer, and the Naturalist, have augmented the bounds of their respective sciences.

THE infinite variety of the productions of Nature thus presented to our view, must alone excite astonishment; but when we consider the art, mechanism, and even the beautiful irregularity, perceptible in all her operations, we are overwhelmed with admiration! In vain do we endeavour to reduce the various objects to systematical order; the idea may please, but it is only an agreeable illusion: new discoveries occasion new difficulties in our progress; and the most aspiring mind must at last acquiesce in acknowledging, that the CREATING ENERGY, who spoke all things into life, has endued his innumerable hosts of creatures with powers adapted to their respective destinations—relative, yet dissimilar; harmonious, yet contradictory to each other.

IN attempting to methodize, and reduce to classes, creatures opposite in their propensities, dispositions, and conformations, though accidentally corresponding in some particular instances, the lights presented to the eyes of man serve only to bewilder and confound him. The analogy between some creatures is evident, and the genus distinct: this encourages him to proceed in the investigation of his favourite hypothesis; an insuperable chasm interrupts his progress, and wild conjecture usurps the place of rational demonstration.

INDEED, the ineffectual attempts of the profoundest scholars, and the most indefatigable enquirers, might have convinced succeeding Naturalists, that their abilities were not to be proved on the scale of systematic arrangement, but rested rather on the accuracy of their descriptions, and the extent of their observations.

EVEN the intelligent and the penetrating Linnæus, to whom the world is under the highest obligations, and whose memory will ever be revered while taste and science remain, found it impossible to obviate all the difficulties of

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a generic arrangement in the different branches of Zoology: every new edition of his invaluable labours varied the preceding plan; and his last, the most unexceptionable of all, left the Lord of the Creation classed with Apes, Monkies, Maucaucos, and Bats!

THE sublime disorder of Nature herself, too prolific to enumerate or arrange her productions; and the essential variations between the most celebrated Naturalists, who confound while they attempt to explain; first suggested the idea of offering Zoology to the world in a method hitherto unattempted.

WITH this view, the different tribes of beings which people the earth, the air, and the water, are not only industriously collected, and faithfully described; but their œconomy, habits, and qualities, with every other matter relative to the science, are minutely explained in alphabetical order.

BUT though, in the present work, we have emancipated ourselves from system, we scruple not to retain as much method as perspicuity may require, where a genus is compleat, and the species bearing the same name vary by local rather than by natural causes.

IN the prosecution of this arduous plan, every assistance has been called in which could be derived from the most accurate observers of Nature, both ancient and modern; from authentic Voyagers and Travellers; and from the Philosophical Transactions of our own, and the Memoirs of Foreign Countries.

THE beautiful Delineations from Nature with which the work is at once elucidated and adorned, are all drawn and coloured from actual specimens, by Naturalists of acknowledged reputation, who have visited the Cabinets of the Virtuosi in every part of Europe, and occasionally published their researches; with the invaluable addition of a vast variety of curious Animals, which the indefatigable industry, the consummate skill, and the munificent expence, of Sir ASHTON LEVER, in the establishment of his noble Museum, have enabled us to lay before the public for the first time, from Original Drawings by the most ingenious Artists.

A NEW

Preliminary Essay on Generation.

IT seems requisite that zoologists should consider animals in their nascent state, before they survey them in their maturity; that they should trace them from the more early periods of their existence; and give a general view of those diversities in their generation which distinguish one class from another, before they exhibit them as possessing the most perfect faculties their respective natures will permit, or performing those functions for which Providence seems to have peculiarly adapted them. In this essay, therefore, we shall keep this object and this duty solely in view; and, with a philosophic apathy, describe circumstances and scenes which the nature of our undertaking requires at our hands, and which the sensual alone can pervert to indecency.

With that humility of mind which the reflection is calculated to inspire, we must confess, that a time has been, when the proudest and noblest animal has participated in the same imbecility with the meanest reptile; and, while yet a candidate for existence, was equally helpless and contemptible. In their incipient state, all are upon an equality; the insect and the most acute philosopher being equally insensible, clogged with gross matter, and unconscious of existence. Where then are we to commence our history of those beings which make such a distinguished figure in the creation? Or, where lie those peculiar characters in the parts that conspire to form an animated nature, that mark one animal as destined to grovel in the dust, and another to glitter on the throne?

The philosophers of every age have attempted the solution of this question, which has ever been a subject of curiosity: they have, indeed, formed many rational suppositions, and made considerable advances; but still certainty is wanting to confirm their hypotheses, and the enquiry remains unsolved with physical precision. In tracing Nature to her most hidden recesses, she becomes too minute or obscure for our inspection; so that we find it impossible to mark her first differences, to discover the point where animal life begins, or the cause that conduces to set it in motion. We know little farther, than that the greatest number of animals require the concurrence of a male and female to re-produce their kind; and that these distinctly and invariably are found to beget creatures of their own species. But curiosity has been actively, though unsuccessfully, employed in trying to discover the immediate result of this union; how far each sex contributes to the begetting animal life; and whether we are most indebted for the privilege of our existence to the exertions of the male or the female.

Hippocrates was of opinion, that fecundity proceeded from a commixture of the seminal liquor of both sexes, each of which equally contributed to the formation of the incipient animal. Aristotle, on the other hand, would have the seminal liquor in the male alone to contribute to this purpose; while the province assigned to the female by this naturalist was to supply the proper nourishment for its support.

Such were the opinions of these fathers of philosophy; and these continued as the sacred and inviolate belief of naturalists and schoolmen for a number of succeeding ages.

At length, Stena and Harvey, taking anatomy for their guide, whereas the world had before proceeded on speculation, afforded mankind a nearer view of nature just advancing into animation. These observed, in all such animals as produced their young alive, two glandular bodies, near the womb, resembling that ovary, or cluster of small eggs, which is found in fowls; and from the analogy betwixt both, they gave these also the appellation of ovaria. As these resembled eggs, by no unnatural conclusion, they imagined them destined for the same offices; and, therefore, they were induced to think that all animals, of what kind soever, were produced from eggs.

At first, however, there was some opposition made to this system; for, as these ovaria were separate from the womb, it was objected, that they could not, in any evident respect, be conducive in replenishing that organ, with which they had no visible communication. But, on more minute inspection, Tralopius, the celebrated anatomist, perceived two tubular vessels depending from the womb, which, like the horns of a snail, possessed an inherent power of erecting themselves, of embracing the ovaria, and of receiving the eggs, in order to be fecundated by the seminal fluid.

This discovery seemed, for a long time, to fix the opinions of philosophers, and to terminate conjecture. The doctrine of Hippocrates was re-established, and the principal business of generation was ascribed to the female.

This remained likewise as an established opinion for some time; but Lewenhoeck, once more, shook the whole system, and produced a new schisma among the admirers of abstruse speculation. On examining the seminal liquor of a vast number of male animals with microscopes, by which his sight was assisted far better than that of any of his predecessors had been, he perceived therein an infinite variety of little living creatures, like tadpoles, very brisk, and floating in the fluid, with a seeming voluntary motion. Each of these, therefore, was considered as the rudiments of an animal, similar to that from which it was produced; and this only required a reception from the female, together with proper nourishment, to complete its growth.

The business of generation was now given back to the female a second time, by many; while others suspended their assent, and chose rather to confess ignorance than embrace delusive appearances.

In this manner has the dispute continued for several ages; some accidental discovery serving, at intervals, to renew the debate, and revive curiosity. It was a subject where speculation could find much room to display itself; and M. de Buffon, who was fond of hypotheses, could not overlook such an opportunity of giving scope to his propensity. Accordingly, this most elegant and most pleasing of all naturalists discovered, by the assistance of the microscope, that not only the seminal liquor of males, but also of females, abounded with these little living animals; and that they appeared equally brisk in either fluid. These he takes not to be real animals, but organic particles, which, being simple, cannot be said to be organized themselves, but to go to the composition of all organized bodies whatever: in the same manner as a tooth in the wheel of a watch, cannot be denominated either the wheel or the watch, and yet contributes to the sum and perfect on of the machine.

According to this naturalist, these organical particles are diffused through all nature; and are found not only in the seminal liquor of animals, but in most other fluids in the parts of vegetables, and all parts of animated nature. As they happen, therefore, to be differently applied, they serve to constitute a part of the animal or the vegetable, whose growth they help to encrease, while the superfluity is thrown off in the seminal liquor of both sexes, for the reproduction or generation of other animals or vegetables of the same species. These particles assume different figures, according to the receptacle into which they enter: falling into the womb, they unite into a fetus; beneath the bark of a tree, they pullulate into branches; and, in short, the same particles that first formed the animal in the womb, contribute to encrease its growth after parturition.

But let us attend a while to the arguments of this eloquent author to establish his principles: and when the envy that waits on living merit is extinct, it is more than probable his system will universally prevail.

‘The expansion and growth,’ says he, ‘of the different parts of man’s body, being effected by the intimate penetration of organic particles, analogous to each of those parts, all the organic particles, in early life, are absorbed, and entirely employed in unfolding and augmenting his different members. But, when the body of man has attained to nearly its full size, he requires not the same quantity of organic particles; the surplus is therefore sent from all parts into reservoirs destined for their reception. These reservoirs are the testes and seminal vessels. At this very period, when the growth of the body is nearly completed, puberty commences, and every phenomenon attending it discovers a superabundance

of nourishment: the voice changes into a deeper tone; the beard begins to appear; the parts destined for generation are suddenly expanded; and the seminal fluid fills the reservoirs prepared for its reception. This superabundance is still more evident in the female: it discovers itself by a periodic evacuation, which commences and terminates with the faculty of propagating; by a quick increase of the breasts; and by a change in the sexual parts.

I conceive, then, that the organic particles sent from all parts of the body into the testicles and seminal vessels of the male, and into the ovarium of the female, compose the seminal fluid; which, in either sex, is a kind of extract from the different parts of the body. These organic particles, instead of uniting and forming an individual, similar to that in whose body they are contained, as happens in vegetables and some imperfect animals, cannot accomplish this end without a mixture of the fluid of both sexes. When this mixture happens, if the organic particles of the male exceed those of the female, the result is a male; but, if those of the female are most abundant, a female is generated. I mean not that the organic particles of the male or of the female could singly produce individuals: a concurrence or union of both is requisite to accomplish this purpose. Those small moving bodies, called spermatic animals, which, by the assistance of the microscope, are seen in the seminal fluids of all male animals, are, perhaps, organized substances proceeding from the individual which contains them; but, of themselves, they are incapable of expansion, or of becoming animals similar to those in whom they exist. That there are similar animalcules in the seminal fluids of females, is a circumstance which has often been disputed, but may nevertheless be proved.

The ancients, indeed, were so confident of the existence of a seminal fluid, that they distinguished the two sexes by their different modes of emission: *Quod intra se semen jact, femina vocatur; quod in hac jact, mas.* Arist. de Animal. But those physicians who attempt to explain generation by eggs, or by spermatic animalcules, insist that females have no particular fluid; that the mucus issuing from the parts has been mistaken for a seminal fluid; and that the opinion of the ancients on this subject is destitute of foundation. This fluid, however, does exist; and the doubts concerning it have arisen solely from attachment to system, and from the difficulty of discovering its reservoir. The fluid which is separated from the glands about the neck and orifice of the uterus, has no visible reservoir; and, as it flows out of the body, it is natural to think it is not the prolific fluid, because it cannot operate in the formation of the foetus, which is performed within the uterus. But, if a little of the male fluid enters the uterus, either by its orifice or by absorption, and meets with the smallest drop of the female fluid, it is sufficient for the purpose of propagation. Thus, neither the observations of some anatomists, who maintain that the seminal fluid of the male can have no admission into the uterus; nor the opposite opinion maintained by their antagonists; have any influence on the theory we are endeavouring to establish.

But the strongest proof that the semen of both sexes conduces to propagation, arises from the resemblance of children to their parents. Sons, in general, resemble their fathers more than their mothers; and daughters have a greater resemblance to their mothers than their fathers; because, with regard to the general habit of body, a man resembles a man more than a woman; and a woman resembles a woman more than a man. But, as to particular features or habits, children sometimes resemble the father, sometimes the mother, and sometimes both. A child, for example, will have the eyes of the father, and the mouth of the mother; or the complexion of the mother, and the stature of the father. Of such phenomena it is impossible to give any explication, unless we admit, that both parents have contributed to the formation of the child, and consequently, that there has been a mixture of two seminal fluids.

Having endeavoured to place the system of this eminent writer in an impartial light, we must briefly advert to the objections that other hypothetical enquirers have urged against it.

In the first place, it has been said, that it is impossible to conceive organical substances without being organized; and that, if destitute of organization themselves, they could never make an organized body, as an infinity of circles could never make a triangle. It has been objected, that it is more difficult to conceive the transformation of these organic particles, than even that of the animal whose growth we are enquiring after; and, consequently, that this system endeavours to explain one obscure thing by another still more obscure.

It has also been farther maintained, that these little animals, which thus appear swimming and sporting in almost every fluid, when microscopically examined, are not real living particles, but some of the more opaque parts of the fluid, that are thus increased in size, and seem to have a much greater share of activity than they actually possess. For the motion being magnified with the object, the smallest degree of it will appear very considerable; and a being almost at rest may, by these means, be apparently put into violent action. Thus, for instance, if we observe the sails of a windmill moving at a distance, they appear to go very slow; but, if we approach them, and thus magnify their bulk to our eye, they turn round with rapidity. A microscope, in the same manner, serves to bring our eye close to the object, and thus to enlarge it; and not only to increase the magnitude of its parts, but also of its motion. Hence, therefore, it would follow, that these organic particles which are said to constitute the bulk of living nature, are but mere optical illusions; and that the system founded on them must likewise be illusive.

On subjects where certainty cannot possibly be obtained, the mind frequently becomes bewildered; and in the search of truth, which it cannot recognize even when found, loses itself in boundless scepticism, or endless conjecture. Happily, however, for mankind, the most abstruse enquiries are generally the most useless. Instead, therefore, of balancing accounts between sexes, and attempting to ascertain to which the business of generation most principally belongs, it will be more instructive, as well as entertaining, to begin with animal nature from its earliest retirements and evanescent outlines, and to pursue the incipient creature through all its changes, till the period of its coming forth perfect in its kind.

Animals have usually been distinguished, with regard to their manner of generation, into the oviparous and viviparous kinds; or, in other words, into those which bring forth an egg, which is afterwards hatched into life; and those which bring forth their young alive and perfect. In one of these two modes all animals were supposed to have been produced, and all other kinds of generation were regarded as imaginary or erroneous. But later discoveries have taught us to be more cautious in drawing general conclusions; and have even induced many to doubt whether animal life may not be produced merely from putrefaction.

Indeed, the infinite number of creatures that seem to derive their birth from putrid substances, and the variety of minute insects seen floating in liquors, by the assistance of the microscope, appear to favour this opinion. Buffon observes, that there are perhaps as many beings, which either live or vegetate, produced by a fortuitous assemblage of organic particles, as by a constant and successive generation. 'It is to such productions,' continues he, 'that we ought to apply the axiom of the ancients, *corruptio unius, generatio alterius.* In the corruption, the fermentation, or rather in the resolution of animal or vegetable substances, we find real animals, capable of propagating their species, though they were not themselves produced in this manner. These varieties are more extensive than we imagine. Though it be right to generalize our ideas, to assemble the effects of nature under one point of view, and to class her productions; yet numberless shades, and even degrees, in the great scale of being, will always escape our observation.'

But whether we admit or disallow the truth of equivocal generation, it is certain that the former distinctions of generation were too limited: for we find many animals produced neither from the womb nor from the shell, but merely from cuttings; so that to multiply life in some creatures, it is sufficient to multiply the dissection. This being the simplest method of generation, and that in which life seems to require the smallest preparation for its existence, we shall begin with it, and thus proceed from the meanest to the most elaborate.

The earth-worm, the millipede, the marine-worm, and many other insects belonging to the watery element, may be multiplied by being cut in pieces: but, of all other existences endowed with this extraordinary method of propagation, the polypus is the most remarkable; and from hence we shall select our description.

The structure of this creature may be compared to the finger of a glove, open at one end, and shut at the other. The closed end represents the tail of the polypus, with which it fixes itself to any substance it happens to approach; the open end may be compared to the mouth; and, if we conceive six or eight small strings issuing from this end, we shall have a distinct idea of its arms, which it can erect, lengthen, and contract, at pleasure, like the horns of a snail.

The polypus is extremely voracious, and makes use of its arms to catch and entangle such minute insects as come within its reach. It lengthens these arms several inches, keeps them separated from each other, and thus occupies a large space in the water, where it resides. These arms, when extended, are as fine as threads of silk, and possess a most

exquisite degree of feeling. If a small worm happens to get within the sphere of their activity, it is quickly entangled by one of these arms; and soon after, the others being drawn in the same direction to its aid, the worm is brought to the mouth of the animal, and speedily devoured, colouring the body as it is swallowed. Thus much is necessary to be observed of this animal's mode of living, to evince that it is a real existence, and not of the vegetable tribe; but more extraordinary circumstances still remain to be unfolded concerning it. If examined with a microscope, there are seen several little specks, like buds, pullulating from different parts of its body; and these soon after appear to be young polypi, which, like the larger sort, begin to cast their little arms about for prey, in a similar manner.

Thus every polypus has a new colony sprouting from its body; and these nascent ones, even while attached to the parent animal, become parents themselves, having a still smaller colony budding from them: all, at the same time, busily employed in searching for their prey; and the food of any one of them serving for the nourishment, and circulating through the bodies of all the rest. This society, however, is every hour dissolving; those newly produced are seen at intervals to quit the body of the large polypus, and become, shortly after, the head of an incipient colony themselves.

After this manner, the polypus multiplies in a natural course; but it may be increased by a much shorter and expeditious way. Though cut into a thousand pieces, each part still retains its vivacious principle, and each shortly becomes a distinct and compleat animal. Whether cut longitudinally or transversely, it is all the same: it gains by our endeavours, and multiplies by apparent destruction. The experiment has been so repeatedly tried, that nothing can be better confirmed than this method of generation, which may be strictly called philosophical. The famous Sir Thomas Brown hoped one day to be able to produce children by the same means as trees are produced: the polypus is certainly multiplied in the manner related; and every philosopher may thus, if he pleases, boast of a numerous, though useless progeny, without being accused of cruelty in his experiments, as he will be encreasing animal life, instead of destroying it.

This mode of generation, from cuttings, may well be considered as the simplest of all possible kinds; and may serve to shew how little pains Nature takes in the formation of her lower and humbler productions. As the removal of these from inanimate into animal existence is but small, few preparations are either made or become necessary for their journey. No organs of generation seem provided, no womb to receive, no covering to protect them in their state of transition. The little reptile is quickly equipped for all the functions of its humble sphere; and, in a short time, arrives at the summit of its contemptible perfection.

The generation of animals from an egg constitutes the next superior degree of generation. In this manner all birds, the generality of fishes, and many of the insect tribes, are produced. An egg may be considered as a womb, detached from the body of the parent animal, in which the embryo is but just commencing to be formed: it may be regarded as a kind of imperfect delivery, in which parturition takes place before the offspring has attained its compleat formation. Fishes and insects, indeed, most usually commit the care of their eggs to hazard; but birds, which are more perfectly organized, are found to hatch them into maturity by the warmth of their bodies. However, any other heat, of the same temperature, would answer the purpose as effectually; for either the warmth of the sun, or of a stove, is equally powerful in bringing the animal inclosed in the egg to a state of perfect existence. Nature has taken care of the viviparous animal in every stage of its being. That force which separates it from the parent, separates it from life; and the embryo is shielded with unceasing protection, till it arrives at exclusion.

It is far otherwise with the little animal in the egg: often totally neglected by the parent, and always separable from it, every accident may retard its growth, or even destroy its existence. Besides, art, or even chance, may also bring this animal to a state of perfection; so that it can never be considered as a compleat production of nature, in which so much is left for accident to accomplish or retard.

But, inferior as this species of generation unquestionably is, its consideration will afford great insight into that of nobler animals, as we can here watch the progress of the growing embryo in every period of its existence, and catch it in those very moments when it seems starting into motion. Malpighi and Haller have exerted particular industry on this curious subject; and, with a patience almost equal to that of a sitting hen, have attended incubation through all its stages. From them, therefore, we have a wonderful history of the chicken in the egg, and of its gradual advances to compleat existence.

It would be tedious and uninteresting to describe those parts of the egg which are well known and obvious, such as its shell, its white, and its yolk; but the disposition and uses of these are not so apparent. Immediately under the shell lies that common membrane, or skin, which lines it internally, every where adhering to it very closely, except at the broad end, where a small cavity is left, which is replete with air, and which encreases as the inclosed animal becomes larger. Under this membrane are contained two whites, though seemingly only one, each wrapped up in a membrane of its own, one white within the other. In the centre of all this is the yolk, wrapt round, likewise, in its own membrane. At the end of this are two ligaments, denominated chalazæ, forming, as it were, the poles of this microcosm; being dense white substances, made from the membranes, and serving to keep the white and the yolk in their natural places.

It was the opinion of Mr. Derham, that these ligaments answered likewise another purpose: for a line being drawn from one ligament to the other, would not pass directly through the middle of the yolk, but rather towards one side; and would divide the yolk into two unequal parts, by which means the chalazæ served to keep the smallest side of the yolk always uppermost; and in this part he supposed the cicatricula, or first speck of life, to reside; which, by being uppermost, and consequently next the hen, would thus enjoy the warmest situation.

But this is rather ingenious than real; the incipient animal being found in all situations, and appearing uninfluenced by any. This cicatricula, which is the part where the animal first begins to shew signs of life, is not much unlike a vetch or lentil, lying on one side of the yolk, and within its membrane. All these contribute to the convenience or support of the little animal; the exterior membranes and ligaments preserve the fluids in their proper places; the white serves as nourishment; and the yolk, with its membranes, after a due space, becomes a part of the animal's body. Such is the nature of the egg of an hen; and the same description applies to those of birds of every size.

Previous to their placing the eggs under the hen, the naturalists from whom we derive our principal information on this subject, well examined the cicatricula, or little spot, already mentioned; which may justly be considered as the most important part of the egg. In such as were impregnated by the cock, this was found to be large; but in those laid without the cock, very small. It was found, on a microscopic examination, to be a kind of bag, containing a transparent fluid, in the centre of which the embryo was observed to reside. The embryo resembled a composition of little threads, which the genial warmth of future incubation tended to enlarge, by varying and liquifying the other fluids contained within the shell, and thus pressing them either into the pores or the tubes of their substance.

The eggs being placed in a proper warmth, either exposed to the sun, or in a stove, after six hours, the speck begins to dilate, like the pupil of the eye. The head of the chicken is distinctly seen, with the back-bone, somewhat resembling a tadpole, floating in its ambient fluid; but as yet seeming to assume none of the functions of animal life. In the space of six hours more, the little animal is more distinctly seen; the head becomes more visible, and the vertebrae of the back more plainly perceptible. All these preparatory signs of incipient existence are encreased in six hours more; and, at the end of twenty-four, the ribs begin to assume their places, the neck to lengthen, and the head to incline to one side.

The fluids in the egg seem also at this period to have changed place; the yolk, which was before in the centre of the shell, approaching nearer to the broad end; the aquatic part of the white is, in some measure, evaporated through the shell; and the grosser parts sink to the small end. The little animal appears to turn towards that part of the broad end, in which a cavity has been described, and, together with its yolk, seems to adhere to the membrane there.

At the end of forty hours, the great work of life seems fully begun, and the animal plainly appears to move; the back-bone, which is of a whitish colour, thickens; the head is still more inclined towards one side; the first rudiments of the eyes shew themselves; the heart beats, and the blood already commences its circulation. The parts, however, still continue fluid; but, by degrees, become more and more tenacious, and harden into a kind of jelly.

At the expiration of two days, the liquor in which the chicken swims seems to encrease; the eyes exhibit the appearance of two small bladders; and the heart palpitates in the manner of every embryo where the blood does not circulate.

culate through the lungs. In fourteen hours more, the chicken has acquired additional strength; the head, however, is still bent downwards; the veins and arteries begin to branch, in order to form the brain; and the spinal marrow is seen stretching along the back-bone.

In three days the whole body of the nascent animal appears bent; the head, with its two eye-balls, and their different humours, now distinctly disclose themselves to view; and five other vesicles are seen, which soon unite to form the rudiments of the brain. The outlines also of the thighs and wings begin to be distinguished; and the body seems to gather flesh.

At the end of the fourth day, the vesicles that compose the brain approach each other; the wings and thighs appear more solid; the whole body is covered with a gelatinous substance resembling flesh; the heart, that was hitherto exposed, is now concealed within the body by a very thin transparent membrane; and at the same time the umbilical vessels, which unite the animal to the yolk, now appear to proceed from the abdomen.

After the fifth and sixth days, the vessels of the brain begin to be covered over; the wings and thighs lengthen and expand; the belly is closed up and becomes tumid; the liver is perceived within it very distinctly, still of a very dusky white colour; both the ventricles of the heart are discerned, as if they constituted two separate hearts; the whole body of the chicken is covered over; and the traces of the incipient feathers are already perceptible.

The seventh day, the head appears enlarged; the brain is wholly clothed over; the bill begins to appear; and the wings, the thighs, and the legs, have acquired their perfect figure.

Hitherto, however, the animal appears as if it had two bodies; the yolk is united to it by the umbilical vessels proceeding from the belly, and is furnished with its vessels, through which the blood circulates as through the body of the chicken, forming a greater bulk than that of the animal itself. But towards the end of incubation, the umbilical vessels shorten the yolk; and with it the intestines thrust up into the body of the animal, by the action of the muscles of the belly; and the two bodies, as they appear, are thus formed into one.

During this state, all the organs are observed to perform their secretions; the bile is found to be separated, as in grown animals; but it is fluid, transparent, and tasteless: the chicken then appears also to have lungs.

On the tenth day, the muscles of the wings appear, and the feathers begin to be protruded. On the eleventh, the heart, which had hitherto seemed divided, begins to unite; and the corresponding arteries unite, like the insertion of the fingers into the palm of the hand.

By the eleventh day, the animal being thus compleatly formed, begins to gather strength, becomes more uneasy in its situation, and exerts its vital powers with encreasing force. For some time before it is able to break through its prison, it is heard to chirrup, receiving a sufficient quantity of air for this purpose from the cavity lying between the membrane and the shell, and which must necessarily contain air to resist the external pressure.

At length, on the twentieth day in some birds, and later in others, the inclosed animal breaks the shell within which it had been confined, with its beak; and, by repeated efforts, at last procures its liberation.

From this minute history of incipient life, in a humble race in the scale of creation, we may readily perceive, that those parts which are most conducive to life are first begun: the head and the back-bone, which enclose the brain and the spinal marrow, though both are too limpid to be discerned, are the first that appear to exist; the beating of the heart is perceived soon after; the less noble parts seem to spring from these; the wings, the thighs, the feet, and, lastly, the bill. Whatever, therefore, the animal possesses double, or whatever it can live without the immediate use of, are latest in production: Nature thus appears sedulous in applying to the formation of the nobler organs, without which life would be but of short continuance, and would be begun in vain.

From analogy we may infer, that the resemblance between the incipient animal in the egg, and the embryo in the womb, is very striking; and this similitude has induced many to assert, that all animals are produced in like manner from eggs. Those who maintain the ovarious system, consider an egg excluded from the body by some, and separated into the womb by others, as actions of the same kind; with this only difference, that the nourishment of the one is retained within the body of the parent, and encreases as the embryo happens to want the supply; the nourishment of the other is prepared all at once, and furnished by the producing animal as a stock entirely sufficient for the future support of its offspring.

But, leaving this to the discussion of anatomists, let us proceed rather with facts than opinions; and, as we have seen the progress of an oviparous animal, let us likewise trace that of a viviparous one.

In the investigation of this subject, De Graaf has, with almost unexampled patience and sedulity, attended the progress and increase of various animals in the womb, and minutely marked the changes they undergo. Having dissected a rabbit half an hour after impregnation, he perceived the horns of the womb, that embrace and communicate with the ovary, to be redder than before; but no other change was visible in the other parts. Having dissected another, six hours after, he perceived the follicles, or the membrane covering the eggs contained in the ovary, to become reddish. In a rabbit dissected after twenty-four hours, he perceived, in one of the ovaries, three follicles; and, in another, five, that had undergone some change, exhibiting a dark and reddish appearance, whereas they usually are transparent. In one dissected after three days, the horns of the womb were observed to embrace the ovaries very closely; and he observed three follicles in them, much larger and harder than before.

Pursuing his inquiry, he also found two substances resembling eggs actually separated into the horns of the womb, each about the size of a grain of mustard-seed: these were separately inclosed in a double membrane, the inner parts being replenished with a very limpid liquor.

After four days, he found in one of the ovaries four, and in the other five follicles, emptied of what he calls their eggs; and, in the horns corresponding with these, he observed an equal number of eggs thus separated, which were grown still larger. In five days time, they were still more encreased in size: in seven, they were found as big as a pistol-bullet, each covered with its double membrane, and these much more distinct than before.

At the expiration of nine days, having examined the liquor contained in one of these eggs, he found it was become less fluid, and limpid. In ten days, a cloud seemed to thicken on its surface, and to form an oblong body, of the figure of a little worm; and in twelve days, the figure of the embryo was distinctly perceptible, and even its parts were distinguishable. In the region of the breast, he perceived two bloody, and two whitish specks.

Fourteen days after impregnation, the head of the embryo was become large and transparent, the eyes prominent, the mouth open, and the rudiments of the ears began to appear: the back-bone, which was of a whitish colour, inclined towards the breast; the two bloody specks, observed before, now exhibited the outlines of the two ventricles of the heart; and the two whitish specks on each side, appeared to be the rudiments of the lungs. Towards the region of the belly, the liver began to disclose itself, and to assume a reddish colour; and a little intricate mass, like ravelled thread, soon appeared to be the origin of the stomach and intestines. The legs speedily became visible, and assumed their natural position; and from that time forth, all the parts being formed, every day served to develop and expand them still more, till the thirty-first day arrived, on which the rabbit brought forth her young in due course of nature.

Thus having surveyed the different modes and stages of generation in the more ignoble animals, let us take a view of its progress in man, and investigate the feeble beginnings of our own existence.

An account of the lowliness of our own origin, if it should not prove entertaining, will, at least, serve to humble us; and it may diminish our pride, though it fails to gratify our curiosity. In this case we cannot so accurately trace the commencement of the incipient animal, as in the former instances; for the opportunities of inspection are but few and accidental. We must therefore content ourselves to fill up the blanks of our history with rational conjecture, where ocular demonstration has never been procured.

Immediately after conception, we have no regular idea of the state of the embryo in the womb. However, anatomists inform us, that four days after conception, an oval substance is perceived in the womb, about the magnitude of a small pea, but longer one way than the other. This little body is formed by an extremely fine membrane, inclosing a liquor bearing a strong resemblance to the white of an egg; and in this, several small fibres, united together, have been distinguished, which unquestionably form the first rudiments of the embryo. Besides, there are seen another set of fibres, which soon after form themselves into the placenta, or that body by which the incipient being is supplied with nourishment.

PRELIMINARY ESSAY ON GENERATION.

At the space of seven days after conception, we can readily distinguish by the eye the first lineaments of the child in the womb. However, they are as yet without form; being a small gelatinous mass, yet exhibiting the rudiments of the head; the trunk being also in some measure distinguishable, together with a small assemblage of fibres issuing from the body of the infant, which afterwards become the blood-vessels that convey nourishment from the placenta to the child while inclosed in the womb.

Fifteen days after conception, the head becomes more distinctly visible, and even the most prominent features of the visage begin to appear. The nose is a little elevated; there are two black specks in the place of eyes; and two little apertures, where the ears are afterwards formed. The body of the embryo is also grown larger; and both above and below, are two little protuberances, which mark the places from whence the arms and legs are destined to proceed. The whole length of the fœtus at this time is less than half an inch.

Three weeks after conception, the body has received but very little increase; but the legs and feet, with the hands and arms, are become unfolded. The growth of the arms is more rapid than that of the legs; and the separation of the fingers takes place sooner than the toes. About this time, the internal parts are found, on dissection, to be slightly distinguishable. The places of the bones are marked by small filiform substances, that are yet more fluid than a common jelly. Among them, the ribs are perceivable, exhibiting the same appearance, disposed on each side of the spine; and even the fingers and the toes scarcely exceed the thickness of a hair.

The embryo, in about the space of a month, is nearly an inch long; the body is bent forward, a situation it almost uniformly assumes in the womb; either because this posture is most convenient, or because it requires least room. The human figure now becomes extremely evident; every part of the face is distinguishable; the body is sketched out; the bowels appear like threads; the bones are still quite soft, but in some places begin to assume a greater rigidity; the vessels communicating with the placenta are plainly seen issuing from the navel, and beginning to spread themselves in the placenta. If we may give credit to Hippocrates, that great father of physic, the male embryo develops sooner than the female: he adds, that the parts of the body of the male are distinguishable at the end of thirty days; while those of the female are not so evident till the expiration of forty.

In six weeks, the embryo has acquired the length of two inches; the human figure daily becomes more and more distinct; the motion of the heart is almost perceptible by the naked eye; and, in an embryo of fifty days old, it has been observed to palpitate for some time after it's removal from the womb.

In two months, the ossification is perceivable in the arms and thighs of the embryo, and in the tip of the chin, the under jaw being greatly advanced before the upper. These parts, however, may still be considered as bony points, rather than as real bones. The umbilical vessels, which before went side by side, now begin to be twisted over each other, like a rope, and go to join with the placenta, which as yet remains very small.

At the expiration of three months, the embryo is above three inches long, and weighs as many ounces. Hippocrates observes, that the mother does not become sensible of the child's motion till that period; and he adds, that in female children this motion is not perceptible till the end of four months. However, this is not an observation that can be uniformly relied on; for some women assert, that they perceive themselves to be quick with child (to use their own mode of expression) at the end of two months; so that this quickness seems rather to originate from the proportion between the child's strength, and the mother's sensibility, than from any determinate space of time. At all times, indeed, the child is equally alive; and consequently, those juries of matrons, which in this country frequently determine on the pregnancy of criminals, should not enquire whether the culprit be quick, but whether she be ensient; if the latter be perceivable, the former follows of course.

Four months and an half after conception, the embryo is from six to seven inches in length; and all the parts have received a proportionable increase. The very nails begin to appear on the fingers and toes; and the stomach and intestines assume their functions of receiving and digesting. A liquor is found in the stomach similar to that in which the embryo floats; in one part of the intestines, a milky substance; and, in the other, an excrementitious. There is also found a small quantity of bile in the gall-bladder; and some urine in it's proper receptacle.

By this time also, the posture of the embryo seems determined and fixed. The head is bent forward, so that the chin seems to rest on the breast; the knees are raised up towards the head; and the legs are bent backwards, somewhat resembling the attitude of those that sit on their haunches. Sometimes the knees are raised so high as to touch the cheeks, and the feet are crossed over each other; the arms are laid on the breast; while one of the hands, and often both, touch the visage; sometimes the hands are shut, and sometimes also the hands depend by the sides. These are the most usual postures that the embryo assumes; but there it is frequently known to change; and from these alterations arise those frequent uneasy sensations which pregnant women are very liable to feel.

Thus situated, the nascent being is furnished by nature with all things proper for it's support; and, as it increases in size, it's nourishment is found also to increase with it. When it first begins to grow in the womb, that receptacle, from being naturally very small, becomes proportionably larger; and, what is more extraordinary, at the same time becomes thicker also. The sides of a bladder, we well know, the more they are distended, the thinner they are; but, in this case, the larger the womb grows, the more it thickens. Within this the embryo is still farther involved, in two membranes, called the chorion and amnios; and float in a thin transparent fluid, on which it seems, in some measure, to subsist. However, the great store-house, from whence it's chief nourishment is derived, is the placenta; a red substance, somewhat resembling a sponge, which adheres to the inside of the womb, and communicates by means of the umbilical vessels with the embryo. These umbilical vessels, consisting of a vein and two arteries, issue from the navel of the child, and are ramified on the placenta, where they seem actually to constitute it's substance; and, if it may be so expressed, to suck up their nourishment from the womb, and it's contained fluids. The blood, thus received from the womb by the placenta, and communicated by the umbilical vein to the body of the embryo, is conveyed to the heart; where, without ever passing into the lungs, as in the infant born, it takes a shorter course; for, entering the right auricle of the heart, instead of passing up into the pulmonary artery, it seems to break this partition, and proceeds directly through the body of the heart, by an aperture called the foramen ovale, and from thence to the aorta, or great artery, by which it is dispersed into all parts of the body.

Thus, in a considerable measure, we find the placenta supplying the place of lungs; for as the little being can receive no air by inspiration, the lungs are therefore entirely useless. But we see the placenta converting the fluid of the womb into blood, and sending it by the umbilical vein to the heart; from which it is dispatched, by a quicker and shorter circulation, through the whole frame.

After this manner the embryo resides in the womb, supplied with that nutrition which it's necessities require, and furnished with those organs which are adapted to it's situation. As it's sensations are few, it's wants are in the same proportion; and it is probable, that an almost continuous sleep, with a few intervals of waking, fills up the earliest periods of existence. As the little creature, however, gains strength and size, it seems to become more watchful and restless; even in the womb, it begins to feel the want of something unobscured; a sensation that seems coeval with the dawn of human life, and which never quits us till death. Even then the embryo begins to struggle for the acquisition of a state more marked by pleasure and pain; and, from about the sixth month, commences it's warnings to the mother of the greater pain than is to be endured.

The duration of pregnancy in women, is usually nine months; but there have been many instances of children born at seven, that have been perfect, and exhibited no marks of premature birth; while parturition has sometimes been delayed till nearly the expiration of the tenth month.

When the appointed time approaches, the infant begins to rebel against it's efforts for liberty. The head is applied down-wards, towards the aperture of the womb; and by reiterated efforts it endeavours to extend the same. These exertions produce the pain which all women on labour in some degree or other feel; those of strong constitutions the least; those of a weaker nature, with more severity; since we learn that the American women always deliver themselves; and in a few hours all pains are perfectly recovered; while the European women need assistance, and require some time to recover their strength, after the violence of the shock parturition occasions.

The efforts of the child at last prevail; it's head breaks through the natural obstacles which are formed to yield, and comes into light. The blood which had hitherto paid tribute to the heart, as has been previously described, now takes a

wider circuit; the foramen ovale closes; the lungs, hitherto inactive, now first assume their functions; the irruption of the air distends them; and this produces the first sensation of pain, which the animal expresses by a shriek: so that the commencement of our lives, as well as their termination, is marked with pain.

On a due comparison of the different modes of generation, we shall necessarily draw this conclusion, that the most laboured is the most perfect. Of all others, man seems the slowest in coming into life, as he is the slowest in arriving at perfection: other animals, of the same magnitude, seldom remain in the womb above six months, while he continues nine; and, even after his birth, his state of imbecility appears prolonged above that of any other.

We may also observe, that the generation is the most compleat by which the fewest animals are produced. Nature, by attending to one at a time, seems to exert all her efforts in bringing it to adequate perfection; but, where this attention is divided, the animals so produced come into the world with partial advantages. Thus twins are never, while infants at least, so strong or so large as those that come singly into the world; each having in some measure deprived the other of its right; as that support which Nature intended for one, has been lavishly divided.

And as the most noble animals are produced singly, so we find that creatures of this description are likewise the least prolific: these usually produce singly, and at long intervals; while the more ignoble kinds are more rapid in their returns, and more numerous in their births. All the oviparous tribes, and even some of the viviparous animals, encrease in a seeming proportion to their minuteness and imperfection. Nature appears lavish of life in the lower orders of creation; and, as if she intended such merely for the use of the higher classes of animated beings, she appears to have bestowed more attention in multiplying the number than in compleating the kind. Thus, while the horse and the elephant produce but one at a time, the spider and the beetle bring forth in thousands: and even among the smaller quadrupeds, all the inferior kinds are extremely fertile.

Hence it is evident, that the smallest animals multiply in the greatest proportion; and we have abundant reason for gratitude to Providence, that the most formidable animals are the least fruitful. Had the lion and the tiger the same fecundity with the rabbit or the rat, all the arts of man would be ineffectual to oppose these fierce invaders; and they would long ere now have become masters of those who are themselves emphatically stiled the lords of the creation. But Heaven has opposed to man only such enemies as he has received strength and art to conquer; and as large animals require proportional supplies, it has withheld life where it has not furnished the proper means of subsistence.

In consequence of this pre-established order, the most perfect animals seldom begin to procreate till they have nearly acquired their full growth; while the inferior tribes frequently generate before they have arrived at half their natural size.

In whatever light, therefore, we view this subject, we shall find room for admiration and thankfulness; we shall be impressed with a due sense of the superior advantages conferred on man, both in the mode of his production, and in the means provided for his future welfare: and while we acknowledge the distinctions which Providence has bestowed on our material part, let us not forget the much more exalted nature of the soul; that endowment which places us infinitely above the highest orders of irrational existence, and which gives us a title to immortality!



1. ABERDAVINE. 2. ACONTIAS. 3. ADMIRABLE. 4. WHITE ADMIRABLE. 5. GRAND ADMIRAL.
6. REAR ADMIRAL. 7. AGOUTI. 8. ALBATROSS.

A

NEW DICTIONARY

OF

NATURAL HISTORY;

OR,

COMPLEAT UNIVERSAL DISPLAY

OF

ANIMATED NATURE.

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A **BACATUAIA.** An American fish, in shape, size, and figure, resembling the common plaice; or, rather, the European doree, or faber. It's mouth is small, and destitute of teeth; and the eyes have each a black pupil, with a fine silvery iris. It is furnished with five fins: one of which is dorsal, and another abdominal, each running to the tail; there are two at the gills; and the tail, which is considerably forked, makes the fifth. This fish, which is commonly caught on the shores of the Brazils, is esteemed wholesome food. Artedi makes it a species of the zeus; and Linnæus the zeus gallus, belonging to the thoracic order of fishes.

ABACAY. One of the numerous species of parrots found in the Philippine islands, called also by the natives calangay.

ABDOMINAL FISH. A distinct order in the Linnæan system, distinguished by having the ventral fins placed behind the pectoral in the abdomen; and comprehending seventeen genera, and an hundred and twenty-seven species.

ABERDAVINE. The name usually given in London to the fishkin, where it is sold as a song-bird, and sometimes at a very considerable price. The crown of the male is black, the neck and back are green, except the shafts on the latter, which are black; the rump, throat, and breast, are of a greenish yellow; the belly is white; the vent feathers are yellowish, and marked with central oblong dusky spots; the pinion quill is of a dusky hue, edged with green; and the exterior webs of the nine succeeding quill-feathers are green, which colour widens by degrees on every feather, till it occupies half the length: from the tenth feather nearly the lower half of each feather is yellow, and the upper black; the exterior coverts of the wings, and the two middle feathers of the tail, are black; the rest of the tail above half-way up is of a delightful yellow, tipped with black.

The female is distinguished by the paleness of her colours, and by her throat and sides being

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white spotted with brown; and her head and back are of a greenish ash-colour, also spotted with brown.

In Sussex the Aberdavine obtains the name of the barley-bird, because it usually visits that county about the barley seed-time; though the seasons at which it arrives in England are very uncertain. It is a bird of passage, and supposed to come from Russia and Germany. In the woods on the banks of the Danube, we are informed by Kramer that it forms it's nest with such amazing security, that though there are an infinite number of young birds to be seen, no one could ever discover a nest.

ABLET, or ALBLEN. A name given by some naturalists to the common bleak, a small fresh-water fish, called in Latin alburnus, and which appears to be truly and properly a species of the cyprinus. Artedi distinguishes it by the name of the five-inch cyprinus with twenty rays in the pinna nai.

ACACALOTL. An American bird, by some called the corvus aquaticus, or water-raven. The male of this species measures four spans from it's beak to the tip of it's tail; and it's legs are a span and a half long. The beak is about six inches long, of a blue colour, and incurvated like a bow. The head is small; the breast and belly are of a variegated red and brown colour; and the back is beautifully intermixed with a vivid purple, black, and green. The wings are of a delightful green, which looks very bright and glossy in the sun.

This elegant bird is a native of Mexico, and frequents the rivers and lakes, where it feeds on fish. It is moderately fleshy, but coarse, and of a rank fishy taste, though not reckoned unwholesome.

ACANTHIAS. A name usually given to the fish whose skin is used in polishing by cabinet-makers and other artificers, and by them called simply fish-skin. See **GALEUS**.

ACANTHOPTERYGII. A distinct order of fishes; whose general characteristic is, that the rays of the fins are bony, and some of them prickly at their extremities. Under this class are comprehended the seventeen following genera: gasteresle-

us, cheelodon, zeus, cottus, trigla, scorpena, trachinus, perca, sciæna, sparus, labrus, mugil, scomber, xiphias, gobiæ, blennius, and ophidion. The term is derived from the Greek *akantha*, a thorn; and *pterygion*, a fin.

ACARA. A fresh-water fish of the Brazils, esteemed very delicate and nutritious food. It's length seldom exceeds four inches; the mouth is small, the jaws are rough like a file, and the back rises like that of the perch. One long back fin, supported by a great number of rigid and prickly rays, runs to the tail. The fins are all brown; the scales are large; the back is of a glossy brown; the sides and belly are white; and the tail is undivided. A large black spot appears on each side near it's middle, and there is another near the tail.

ACARAAYA. A fish caught on the Brazilian shores, by some called *garanha*. It resembles the carp, and commonly grows to three feet in length. The lower jaw is furnished with an even range of sharp teeth, like small needles; and the upper has two very long teeth, with a great number of short ones. The eyes are large and red; and the tail is broad, and a little furcated. The scales are moderately large, of a silvery hue, with an admixture of purple. The under part of the head and the belly are of a pure white; and the fins of a fine pale red, except those under the belly, which are white, slightly edged with red. This fish is much used in Brazil, both fresh and salted.

ACARAMUCU. A fish caught in the Western Ocean, and some other seas, of a very singular and remarkable form. It's body is flatted and taper, about eight inches long, and three broad. The mouth is round, but so small as scarcely to admit the end of a man's little finger. In the fore-part of the mouth, both in the upper and under-jaw, are triangular and sharp teeth, which easily pierce. On each side, exactly below the eyes, are two square fissures, which supply the place of gills; and on the ridge of the back, directly behind the eyes, is placed a fine, slender, pointed horn, of a cylindrical shape, and about three inches long, standing nearly erect, though with a little incurvation backwards. The skin is smooth, of a variegated greyish and brownish colour, and entirely destitute of scales. This fish usually feeds on sea-weeds, and it's flesh is reckoned improper to be eaten.

ACARAPEBA. An American fish, to which some have also given the name of *brofeme*. It grows to nearly a foot in length, and four inches in breadth; the body is somewhat broad and flattened, and covered with large scales of a fine silvery whiteness. The mouth is large, but destitute of teeth; and the tail is furcated. It has one long black fin, the anterior rays of which are rigid and prickly, and the posterior ones soft and flexible. The other fins are of a pure white, like the rest of the body. This fish seems to be a species of *finaris*.

ACARAPINIMIA. A Brazilian fish of the *cantharus* kind, and not very dissimilar to the *cantharus* of the Mediterranean described by Ray.

ACARAPITAMBA. A fish belonging to the Brazilian seas, of an oblong figure, resembling the mullet, and usually growing to upwards of two feet in length. The mouth and teeth are extremely diminutive in proportion to it's size. Along the back runs one long fin, which reaches nearly to the tail, supported by rigid and prickly rays. The tail terminates in two oblique horns; the scales are large, and of a purplish colour, with a beautiful admixture of blue; and along the mid-

dle of each side there runs from the gills to the tail a very broad and elegant gold-coloured line. The back, till it reaches this line, is variegated with small gold-coloured spots; and, under the line, the sides are likewise variegated with beautiful longitudinal small gold-coloured lines of a paler tinge than the broad one. The belly of this curious fish is white, and it's fins are yellow.

ACARAPUCU. A Brazilian fresh-water fish, about eighteen inches long, of a rounded body and small flat mouth. This fish, which is esteemed very wholesome food, has no teeth, but can conceal it's mouth at pleasure. The tail is long and furcated; the scales are of a silvery hue; the back exhibits a fine golden gloss, shining through the whiteness; and there are six large blue spots on the sides. The back, tail, and side fins, are of a pale blue; and the belly fins are of a yellowish tinge. This fish is very palatable and nutritious.

ACARAUNA. A fish caught in the American seas, of which Willoughby describes two species: the one called simply *Acarauna*; the other *Acarauna quadrata*, or square *Acarauna*; and, by our navigators, the old wife.

The common *Acarauna* is of a broad and flattened shape, usually growing to about four or five inches in length; covered with small blackish scales, and furnished with a large furcated tail. It has two fins under the gills; two more under the belly; a fifth running all along the back; and a sixth corresponding with it from the anus to the tail. The mouth is small and narrow; the teeth are diminutive and acuated; and the eyes small. It contains an extremely sharp thorn, or prickle, on each side near the tail, which it can sheath or unsheath at pleasure, and with which it occasionally annoys any fish which comes in it's way.

The square *Acarauna*, or old wife, nearly resembles the former in size; but, being seldom caught, it is deemed worthy a place in the cabinets of the curious. It is of a pale brown colour; with the tail and fore-part of the body of a pale yellow, or rather a straw-colour. It is clothed with scales furrowed with slight parallel lines, except the anterior part of the head, which is covered with a naked, but rough skin. The top of the head rises into an acute angle; the forehead is flat; the eyes are round, large and prominent; the mouth is exceedingly small; and the teeth are slender, and close set. The upper-jaw contains four sharp thorns growing on each side; and the lower, two very large and sharp ones, bending downwards, in shape and formation resembling a cock's spur; from which run up two rows of small prickles to the eyes.

ACARNAN. A small sea-fish very common in the Mediterranean, and generally exposed to sale among *rubellios* or *erythrini*, called by the fishermen *travolino*. It greatly resembles the *erythrinus*; but as that is of a fine red, this, on the contrary, is of a silvery whiteness. The mouth is moderately large; the teeth are slender, and pointed; and the eyes, which are large, are of a beautiful yellow. The fins are perfectly white, except having each a black spot at their origin. Naturalists are at a loss to determine whether this fish is any ways different from the *erythrinus* except in colour, which is not held a sufficient distinction to constitute another species.

ACARUS, or ACARI. A species of vermin lodged under the cutis; where, preying on the parts, it excites an itching, and raises pimples. A German physician has traced the origin of the *Acari*, which

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which he imputes to milk-meats turning stale and sour. The seat of these insects is chiefly in the hands and feet, though they are sometimes found in the arms and legs.

ACARUS is also used by naturalists as a classical name of the lice of animals, whose genera are almost as numerous as the animals on which they breed. In the Linnæan system it is a genus of aptera, with eight legs, two eyes at the sides of the head, and two jointed tentacula, comprehending thirty-five species, of which the following are the most remarkable.

Acarus with very long legs, called by Mousset the long-legged spider, and by Ray and others the ash-coloured crested spider.

Acarus with nippers like crabs, has the fore-legs formed like those of a crab or scorpion, for which reason it is by some called the scorpion spider. This insect has a roundish inflated body of a whitish colour, covered with a thin smooth skin; the head is small, and of a dusky hue towards the mouth. It is frequently found in old rotten wood.

Acarus with very long fore-feet, is about the size of a nit. The body is long, and of a wax-colour, the legs being pale. It is found chiefly on champignons.

Acarus with the second pair of legs very thick, is always seen on the ground, particularly in gardens. It is armed with four exceeding small teeth; it's size is inferior to that of a louse; and it's colour is a dull chesnut.

Acarus with the third pair of feet largest, by some called the bird flea, from it's being found on that tribe of animals.

Acarus red, with the fore-feet longest, and the hind part of the belly forked, is remarkable for having two small horns near the lower belly.

Acarus, with a livid belly of a fallow colour, oval before and with feelers like clubs, by some naturalists is called the dog-louse, and is known by a black round spot near the base of the lower body. The breast is scarcely perceptible; the head is small and black; the mouth is forked; and the feet are black.

Acarus depressed, ash-coloured, with rough sides, is a very small insect, which appears in the beginning of spring, but at other times retires into the earth.

Acarus with a depressed belly, by some called the red little water-spider, lives entirely on the water, is often seen on lakes, and runs with great velocity.

Acarus with a depressed belly, by Ray called the red small earth-spider, is found only in the earth.

Acarus red, with sides of a darker colour, is a very common insect, living upon trees, and remarkable for it's swiftness.

These are the most considerable Acari; but so numerous are their tribes, and so widely are they disseminated through animate and inanimate objects, that neither the naturalist can enumerate them, nor the naked eye behold them. Myriads swarm around, imperceptible to us: they float in our drink; overspread our food and fruits; and, if continually viewed with a microscopic eye, would make us loath the choicest viands, abjure the nectareous cup, and nauseate the most delicious productions of nature. Even those insects which we call Acari, have likewise their Acari, endued with life and motion, and capable of enjoyments suited to their respective spheres of action.

ACBAB. A bird of the Philippine islands, generally found in a wild state, and very much re-

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sembling our common hen. It feeds on rice and other vegetables; but, being short-winded, and incapable of taking long flights, is easily caught. It is reckoned wholesome food, and is therefore often destroyed.

ACCIPENSER. In the Linnæan system, a genus of fish, of the order of nantes, and class of amphibia. The distinguishing characteristics of this genus are, that the mouth is retractile, and destitute of teeth; and the gills have only one hole or aperture on each side.

Of this genus there are only three species: the sturgeon, the Accipenser ruthenus, and the huso or isinglass-fish.

A variety of disputes have originated among naturalists, whether the sturio or sturgeon be the same fish with the Accipenser; and what constituted the difference between the Accipenser and the silurus of the ancients: but the result of the whole appears to be no more than this, that the Romans gave the name of Accipenser to the sturgeon which was caught in their own seas, and used fresh; and called that silurus which was imported in pickle from the coasts of Greece.

ACCIPITER. The name of a whole order of birds, the general characteristic of which is their having a hooked or aduncated beak. Of this order there are four genera; the vultur, falco, strix, and lanius; and seventy-eight different species. See VULTURE, OWL, FALCON, and HAWK.

ACCIPITER. A name given by Gellius and other ancient writers to the fish usually called milvus and lucerna. Artedi distinguishes it by the name of trigla with the head a little acculcated, and a singular fin placed near those of the pectoral.

ACEPHALOUS. A term given to such animals as are either destitute, or supposed to be destitute, of heads. Thus the lumbricus latus, or joint-worm, was long imagined to be Acephalous; but Tulpius, and after him Fehr, discovered that it did not possess this uncommon property; the former, indeed, making it biceps, or two-headed. The ancient naturalists, at the head of whom is Pliny, amused themselves with notions of Acephalous men and women, as well as Acephalous animals; but whether they applied the term by way of sarcasm, or really thought such people existed, remains unknown. Certain it is, that though by some aberration of nature there may have been Acephalous individuals, there never was, nor could be, a whole nation which possessed this singularity.

ACERINA. A name given by Pliny, and the old naturalists, to the fish called in modern times ceruna, and aurata fluviatilis; in English, the ruffe. This is unquestionably a genuine species of perch, and is distinguished from other fish of that genus by having the dorsal fin single and the head cavernous.

ACHAC. A Philippine bird, about the size of a common hen. The belly, breast, and neck, are of a pale brown, and the back is of a dusky reddish hue: the wings are principally composed of blueish green feathers of extraordinary beauty; the tail is white, short, and continually in motion; the eyes are black; the beak is of a thick, strong, obtuse figure, tinged with black; the legs are reddish, and the claws are black. This bird, which is properly of the partridge kind, lives chiefly about the cultivated parts of the Philippine islands, feeding on rice and other vegetables; and, when disturbed, seems to repeat the word 'Phi! Phi!' without intermission.

ACHALALACTLI. A beautiful American bird, remarkable for an annulus or ring of silvery whiteness round it's neck. It is nearly the size of a pigeon; the beak is sharp, and about three fingers breadth long; the head is ornamented with a long crest of a blueish black hue; the belly, and the under-side of the wings, are white; the back, and the exterior part of the wings, like the crest, are of a blueish black, variegated with white spots; and the tail is partly black, and partly blue. This bird is commonly seen near the lakes and rivers of Mexico, where it feeds on small fish, which give it a disagreeable flavour.

ACHETA. A name given by the ancient naturalists to the large species of cicada; the nymphs of which they used to eat, and esteemed them delicious food.

ACHIÆNUS. A term by which the ancients denoted a deer or stag in the second year of it's age. In the first, they gave it the name of nebrus; in the third, it received the appellation of dicrotus; and that of cerastes was continued ever after.

ACICULÆ. A term used by naturalists to express those small spikes, or prickles, in the shape of needles, with which nature has armed several quadrupeds, as well as crustaceous and testaceous animals.

ACITLI. The common Mexican name for the great-crested diver, a bird common to Europe and America, and more usually denominated by naturalists the lepus-aqueus, or water-hare.

ACO. A name given to a Mediterranean fish; called also aquo, sarachus, and sarachinus.

ACOLIN. A bird of the partridge-kind common in Cuba and Hispaniola. It is about the size of a starling; it's legs and feet are of a pale greenish colour; it's toes are very long; it's breast and belly are white; it's beak is yellow, and longish; it's head is small; it's sides are spotted with brown; and it's back and tail are of a dusky yellowish brown. The tail is very short; and both that and the back have some black spots, with narrow bars of white. This bird frequents the margins of lakes, where it is supposed to feed on flies, worms, and other insects usually produced in a watery soil. It is killed for it's flesh, and is esteemed very agreeable food.

ACONTIAS. A species of serpent, called also jaculum, or the dart-snake, from the manner in which it vibrates it's body. It's motion is the swiftest of any known reptile, and is performed by coiling itself upon it's tail, and darting to it's full extent; then, carrying it's tail, as quick as lightning, to the head, coiling and darting again. In this manner it proceeds with extreme rapidity, without ever quitting the ground. It has been generally believed that this serpent possesses the faculty of flying; and, indeed, it is frequently known to dart down from trees on it's prey: but, if we consider the length and weakness of this animal, and the peculiar conformation of the vertebræ, in which all the junctures are formed to give motion, and none to give power, we cannot conceive by what means it can attain the faculty of springing from the ground. It is found in Egypt, Lybia, and the Mediterranean islands. It's length is about three feet; it's colour is a milky grey on the back, variegated with small black spots, appearing like so many eyes; and it's belly is perfectly white. The neck is wholly black, and from that two milk-white streams run all along the back to the tail; and the black spots are each surrounded with a circle of white.

ACORN. A genus of shells, called lepas and balani by Linnaeus, of which naturalists enumerate only a few species, or families. The Acorn-shell is multivalvular, unequal, and fixed by a stem, or sessil; the valves lie parallel to each other, and in a perpendicular position, contrary to that of all other valves, which lie horizontally. The inclosed animal performs it's necessary functions by an aperture at the top; for the valves, being destitute of hinges, never open or separate. It affixes itself to other bodies by the bottom, and is never found detached from some solid body, such as larger shells and stones.

The British coasts furnish six different species of Acorns, which the ingenious Mr. Pennant distinguishes by the names of the common, sulcated, Cornish, striated, bell, and anatisferous Acorns; so called from the variations in their colour and conformation.

The tentacula from this animal being feathered, our credulous ancestors, both naturalists and historians, conceived the idea that it gave origin to a bird called the barnacle-geese. So long did this opinion prevail, that we find, in the Philosophical Transactions of this country, a grave account of it's transformation into a bird; which gave the late Dr. Hill an opportunity, in his dispute with the Royal Society, of exposing the credulity of that respectable body, and their too great love of the marvellous. As it may be amusing to inspect the philosophy of our progenitors, we shall transcribe the following ridiculous account from Gerard.

'What our eyes have seen, and hands touched, we shall declare. There is a small island in Lancashire, called the Pile of Foulders, wherein are found the broken pieces of old and bruised ships, some whereof have been cast thither by shipwreck; and also the trunks and bodies, with the branches, of old and rotten trees, cast up there likewise; whereon is found a certain spume, or froth, that in time breedeth unto certain shells, in shape like those of the muscle, but sharper pointed, and of a whitish colour; wherein is contained a thing in form like a lace of silk, finely woven, as it were, together, of a whitish colour; one end whereof is fastened unto the inside of the shell, even as the fish of oysters and muscles are; the other end is made fast unto the belly of a rude mass, or lump, which in time cometh to the shape and form of a bird. When it is perfectly formed, the shell gapeth open, and the first thing that appeareth is the lace or string; next come the legs of the bird hanging out; and, as it groweth greater, it openeth the shell by degrees, till at length it is all come forth, and hangeth only by the bill: in short space after it cometh to full maturity, and falleth into the sea, where it gathereth feathers, and groweth to a fowl bigger than a mallard, and lesser than a goose; having black legs, and bill or beak, and feathers black and white, spotted in such manner as is our magpye, called in some places a pie-annet, which the people of Lancashire call by no other name than a tree-geese; which place aforesaid, and all those parts adjoining, do so much abound therewith, that one of the best is bought for three-pence. For the truth hereof, if any doubt, may it please them to repair unto me, and I shall satisfy them by the testimony of good witnesses.'

ACTINIA. A genus of sea-animals of the order of the gymnanthia, naturally of a cylindric shape, but of a variable figure: the tentacula are very numerous, and arranged in several series round the

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the mouth, which is placed at one extremity of the body, and is furnished with crooked teeth. The tentacula are in a continual vibratory motion, and by that means draw small animals into it's mouth for food. The animal is equally thick in all it's parts, and about half an inch in length; the tail is trifurcated, or terminating in three points; the colour is a pale flesh, except the tentacula, which have a beautiful variety of hues, and form, when open, a radiated angular circumference, like a beautiful flower with a smooth polygonal disc. It lodges in little cavities of rocks, and of the larger sea-plants of the stony kind; and is found on the coasts of the American islands, of various species, differing from each other in shape, size, and colour. In the Linnæan system, this animal is made a genus of the mollusca order of worms, including five species: the stalky, sulcated, studded, button, and cinque-foil; all which are found on the coasts of the British isles. See ANEMONIES.

ACUS. A long slender sea-fish, of which there are two species, a larger and a smaller, common in the Mediterranean. It is called by the Venetian fishermen *biscia*; that is, the viper-fish. The larger species is often a cubit long, and about the thickness of a finger; the snout is long, tubular, and only open at the end; the mouth is of a strange figure, opening upwards at the extremity of the snout; and the eyes are prominent. From the head to the anus it is of an hexagonal figure, and from the anus to the tail it is square: the anus is placed nearly in the centre of the body, near which is a large longitudinal fissure for the eggs of the female. In all these respects, it bears a strong affinity to the hippocampus. It has two fins at the gills, and another on the back; each of which is extremely small, and, the last in particular, is scarce discernible, unless when the fish is in actual motion. The tail is a small single fin; the skin is hard and variegated; and the quantity of flesh is so small, that the fish is not regarded as worth eating.

ACUS is likewise used by some authors to signify the belone, or paphix; in English, the gar-fish; and, by some, the horn-fish. The two distinct kinds understood by this indefinite term are distinguished by the names of the authors who first noticed them; the tobacco-pipe fish, or that with the tubular nose, being called the Acus of Aristotle; and the gar-fish, or that with the horizontal open mouth, the Acus of Oppian. This last is not very different in shape from the former; being long and slender, with a round back, a flat belly, a very long nose or snout sharp and pointed, and a flat head. The back is of a greenish colour, and the sides and belly are of a silvery white; the head is of a blueish green, and an obscurely dotted purple line runs along the back; the under-jaw is longer than the upper, and both are thick set with sharp teeth. It has only one back fin, and a forked tail.

Bellonius describes another species of this fish, considerably larger than the common one, scaly, and furnished with broader teeth; whereas the common one has either no scales, or they are extremely minute. The dotted dorsal line, however, has been affirmed by some to be a single row of scales, and these persons contend that the fish has no other.

ADDER. A venomous reptile of the serpent kind, sometimes confounded with the asp, but more usually known by the name of the viper. See VIPER.

The distinguishing characteristics between the adder and the snake are, that the former is much

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shorter in proportion to it's bigness, especially below the vent; that it is marked on the back with black lines or spots, which the snake wants; that it's belly is blackish, and of one colour, whereas the snake is party-coloured, of a pale yellow and blue; that it never attains to the size of a snake; and, lastly, that it is viviparous, whereas the snake is oviparous.

ADDER, SEA. The English name of a species of syngnathus, with a round body, destitute of tail or pectoral fins.

ADDER, WATER. A name sometimes applied to the natrix. See NATRIX.

ADEL. A name given by some nations to the lavaretus, or albula nobilis. These, indeed, are usually treated of by naturalists as two different kinds of fish; but Artedi contends that they are the same species, and distinguishes them by the name of the coregonus with the upper jaw flat, and longer than the under, and with fourteen rays in the back fin.

ADMIRABLE. A species of butterfly generally frequenting the great stinging nettle, on which the female commonly lays her eggs; in doing which she flies from one nettle to another, depositing her eggs singly, one on a leaf, and at such distances from each other, that sometimes her store of eggs will be extended over several fields. Nature probably directs her to this method, as a more certain security for the preservation of the species; and so attentive is she to the safety of her young brood, that she often secretes herself among the nettles, in order to examine if they are frequented by ants, or other creatures destructive to caterpillars, before she ventures to deposit a single egg.

No sooner is the egg hatched, than the young caterpillar, being of a very tender nature, begins to seek a place of security; and to keep itself from the injuries of the weather, as well as the ichneumon, of which it seems to live in constant apprehension. It encloses itself in a leaf of the nettle, by drawing it's edges together with the fine silken threads it contains; and, being lodged in security, feeds on that part of the leaf which is next the stalk, till having consumed the greatest part of the leaf, it shifts it's skin, and forsakes it's ruined habitation, to go in search of a place proper for a new one. In this manner the caterpillar proceeds, till one leaf is no longer able to contain it, when it creeps up towards the top of the nettle, and spins itself up within the leaves, after eating the stalk almost through. Sometimes, indeed, it may be found drawing the tops of two contiguous nettles together; and it often happening that some one nettle which may be wanted to compose the habitation, is at too great a distance, on such occasions the caterpillar instinctively consumes the stalk on the farther side, that it may more readily incline to it's purpose.

To find this caterpillar, it is only necessary to examine such nettles as have their tops bending with their leaves, and withered. This is done by the caterpillar of the Admirable; and, among the dead leaves, it's spinning, and probably the chrysalis, may be found, as it seldom begins to work till ready for it's transformation, which happens generally about the beginning of August.

The caterpillars assume various colours: some appearing of a light yellow, or amber colour; and others almost black. The younger caterpillars, however, are black, freckled with small yellow spots. When properly fed, the caterpillar generally affixes itself to it's spinning by means of it's tail, and changes to the chrysalis, though sometimes it may

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may be found hanging openly under a leaf, or any other convenient shelter. Why it changes in this naked and exposed state, contrary to it's usual practice of concealing itself, is not easily accounted for; but the most probable reason is, that the earwigs, which get into it's inclosures in great numbers, oblige it to retire; and, being near the time of it's transformation, it is too feeble to make a fresh coverture, and consequently remains in an exposed state.

The chrysalis is of a beautiful pearl colour, covered with a fine bloom representing that on the plum. But the chrysalides which bear this appearance, are only such as are found in the fields; for those produced from caterpillars fed in houses, are of a dirty brown, though sometimes embellished with small golden spots. The chrysalis state takes up a period of twenty-one days, and then appears the Admirable Fly, so denominated from it's beautiful variety of colours. The female is larger than the male, and may be known by an additional white spot situated in the red part of the superior wings. It frequents solitary lanes, and places over-run with brambles, on the blossoms of which it continually settles. It is extremely quick-sighted, timid, and swift of wing; and, when pursued, generally takes shelter in some lofty tree, where it remains till it conceives the danger is past.

ADMIRABLE, WHITE. This beautiful insect has very seldom been discovered in a caterpillar state in this kingdom, though the fly may be caught in the woods, in the latter end of June and the beginning of July. It flies with great rapidity, often skimming like a swallow, and seems to have a peculiar predilection for the leaves of the oak. Sometimes it settles on the ground, in shady paths of the woods: it is, however, extremely timorous; and, when aware of it's pursuer, darts over the tops of the highest trees with inconceivable velocity, or settles on the loftiest branches, from which it is not easily dislodged.

Though, as we have just observed, this insect is not often found in a caterpillar state in England, it appears from the accounts of German naturalists, that it lays it's eggs on the very tops of the highest poplars, where the young are hatched, and remain during the winter in the caterpillar state, securing themselves by their webs; that in the spring they feed again, when awakened by the genial heat of the sun from their dormant state; and, becoming full fed in the beginning of June, change to the chrysalis; when, towards the end of June, the White Admirable, so much esteemed by aurelians, is produced.

ADMIRAL. A very beautiful and precious shell of the voluta kind, of which the curious enumerate four species: the Grand Admiral, the Vice Admiral, the Orange or Rear Admiral, and the Extra Admiral.

The first of these is held in such high estimation, that a single shell has been sold in Holland for five hundred florins. It's colour is a very elegant and shining white enamel, variegated with yellow bands, representing, in some measure, the colours of the flag of a man of war at sea, from which fancied resemblance it obtained it's name. The shape is peculiarly curious, and the elegance about the head is almost inconceivable, the clavicle being exerted. Along the centre of the large yellow band in this shell, runs a beautiful denticulated line, which is it's distinguishing characteristic.

The Vice Admiral is likewise a very valuable shell; but the conformation of the head is less ele-

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gant than that of the Grand Admiral; and it's broad band wants the denticulated line which distinguishes the latter.

The Orange Admiral contains more yellow striae than the others; from which peculiarity it derives it's name.

The Extra Admiral has the same form and bands as the former; but these bands, running into one another, form a mixed nebulous appearance, which considerably varies in different shells.

ADONIS. A small fish of the anguilliform kind, about six inches long, of a cylindric shape; and a golden colour intermixed with a greenish hue, and sometimes a reddish one. A white straight line runs on each side from the gills to the tail; the gills are remarkably small, which has induced some superficial observers to conclude that it was destitute of any; however, from a minute examination, the contrary appears to be the fact. It is remarkable for sleeping on the surface of the waters, and near the shores; and Rondeletius affirms, that he has even seen it reposing on the dry rocks.

This fish is also called *exocætus*; and Ray suspects it to be the same with the *exocætus* of Bellonius, or the gottorugine.

ADOSCULATION. A term used by natural historians to express a species of copulation or impregnation by mere external contact between the genitals of the two sexes without intromission. Several kinds of birds, fishes, and particularly shell-fish, are impregnated by this method of generation.

ÆGLEFINUS. A name given by the generality of authors to the haddock, a well known fish, of a middle nature between the cod and the whiting; called by others the onos, or *asinus antiquorum*. See **HADDOCK**.

ÆGOCEPHALUS. The classical name of the bird known in England by the appellation of the godwit or stone-plover.

ÆHOITULLA. An East Indian serpent, frequently found in the Island of Ceylon, of a very long and slender form, sometimes wholly green, and sometimes variegated green and white. It lives principally among trees and bushes, and does not appear to be of a very venomous nature.

ÆLQUAPPE. A fish of the mustela kind, the viviparous eelpout, called by some *mustela vivipara*, *aelpute*, *aclmoder*, and *aclmutter*. It grows to about a foot in length; the skin is perfectly smooth; the head and back are of a brownish yellow, marked with blotches of black; the colour of the back becomes paler as it approaches towards the belly, and on the belly is quite whitish. The head is shaped like an eel, and there are four gills on each side; the back-fin reaches the whole length of the body, terminating near the tail; and the belly-fin rises at the anus, and reaches to the extremity of the fish, ending in a fine, slender, and somewhat reddish tail. Besides these, it has two pair of fins: one at the bottom of the gills, which are rather broad; the other under the throat, which are very fine and slender. The young of this species are often found alive in one fish to the number of three hundred: these are sometimes upwards of an inch in length, and will live after they are separated from the parent stock.

ÆERICA. The classical name given by Gaza and others to the common herring.

ÆSALON. A species of hawk of the long-winged race, called in English the merlin. It is the smallest of the hawk-kind, used in the diversion

of hawking; being only about the size of a black-bird. The beak is blue; the eyes are of a hazel colour; a wreath of whitish yellow feathers appears behind it's head; the throat is white; and the back and wings are of a dusky blackish brown. The larger wing-feathers are black, and marked with brown spots; the tail is long, and variegated with transverse streaks of black and whitish brown; the breast and belly are of a whitish brown, variegated with blackish brown spots; and the legs are long and yellow. It preys on partridges, and every other bird over which it's strength gives it an ascendancy.

ÆSCH. A name sometimes given to the grayling or tumbler, a fish of the truttaceous kind, called in Latin thymallus.

ÆSCHNA. A species of water-fly, of an ash-colour, with four wings, and a long body hairy near the tail.

ÆSCULAPII ANGUIS, or SNAKE OF ÆSCULAPIUS. A harmless species of serpent, common in Spain, Italy, and other warm countries. In Italy it is suffered to enter the houses, and frequently ascends the bed where people repose. This animal is of an oblong shape, and about an ell in length. It is of a yellowish colour, except on the back, where it is of a brownish hue. Both jaws are armed with a number of very sharp teeth; and on the neck appear two small eminences, with an empty space between them.

ÆTHI. An ancient name given to one of the web-footed species of fowls which the moderns suppose to be the utamania of Crete, or the common cut or razor-bill.

AFDELLES. A Cretan name for the fish called at Rome donzellina and zigurella. It appears to be the julis of antiquity; and, according to the Artedian zoology, is a species of the labrus. Artedi distinguishes it from the others by the name of the palmar labrus with variegated sides and two large teeth in the superior jaw.

AGNOS. A name given by Athenæus, and many other Greek writers, to the fish called callionymus, or uranoscopus. It is a species of the trachinus; and is distinguished by Artedi from the rest of that genus, by the name of the trachinus with a great number of beards growing from the lower-jaw.

AGONUS. A name used by the generality of authors to express the fish called by some sarrachus, and by others either chaleis or fardella. This fish in many respects resembles the alaufa or shad, called the mother of herrings, but is considerably smaller, never arriving at more than a foot in length; and is always ill-conditioned in spring, but fat and plump in autumn. The distinctions, however, between it and the alaufa, if real, are so very trifling, that the penetrating Ray, and many of the most accurate naturalists, suspect it to be the same fish in a different state.

AGOUTI. This animal seems to be a middle species between the hare and the marmot, and bears some rude resemblance to the hare and the rabbit in it's form and manner of living, though sufficiently different from both to require a particular description. It is found in great abundance throughout South America, and has been by some denominated the rabbit of that continent; but though, in many respects, it bears a strong affinity to the rabbit, it varies from it very essentially, and is most unquestionably an animal peculiar to the new world. The Agouti is about the size of a rab-

bit, and has a head very much like that animal, except that the ears are considerably shorter. It also resembles the rabbit in the arched form of it's back; in the hind-legs, which are longer than the fore; and in having four great cutting teeth, two above, and two below. The Agouti likewise differs from the rabbit in the nature of it's hair, which is not so soft and downy as the hair of that animal, but hard and bristly, like that of a young pig, and of a reddish brown hue. It farther differs from the rabbit in the tail, which is shorter, and entirely destitute of hair. And, lastly, it differs from that animal in the number of it's toes; having but three on the hind-feet, whereas the rabbit has five. All these distinctions, however, do not materially interfere with it's general conformation, which resembles that of the rabbit; and hence most travellers have called it by that name.

But the Agouti varies more essentially from the rabbit in it's habitude and disposition, than in it's form. As it has the external covering of a hog, so also it has it's voracious appetite. It eats indiscriminately of, as well as takes pleasure in gnawing and defacing, every thing which comes in it's way; and, when satiated, conceals the remainder, like the dog and fox, for some future occasion. When irritated, the hair of it's back stands erect; and, like the rabbit, it strikes the ground very violently with it's hind-feet. It does not dig a hole in the ground, but burrows in the holes of trees; and it's ordinary food consists of the roots peculiar to it's native country, such as potatoes and yams, with those fruits which in Autumn fall from the trees. It uses it's fore-paws, like the squirrel, to convey it's food to it's mouth: and, as it's hind-feet are longest, it runs very swiftly on plain ground, or uphill; but, on a descent, it is in danger of falling. It's sight is excellent, and it's hearing inferior to that of no other animal; and, whenever it is whistled to, it stops to hearken. The flesh, when fat and well fed, is tolerable food, though it has a peculiar taste, and is a little tough. Buffon informs us, that the French dress it in the same way as they do a sucking-pig; but the English serve it up with a pudding in it's belly, like a hare.

Whenever the Agouti is entangled in a sugar-ground where the canes stand thick, it is easily overtaken by the dogs; for as it is embarrassed by every step it takes, a man may easily catch it without any other assistance. When in the open country, it runs with amazing speed before the dogs, till it gains it's retreat, within which it continues to hide itself till it is dislodged, and this is usually performed with extreme difficulty. Indeed, nothing but filling the hole with smoke can force it out of it's shelter; for which purpose the hunter burns faggots, or straw, at the entrance, and conducts the smoke into it in such a manner as to fill the whole aperture. While this is performing, the poor animal seems sensible of it's danger; and, by the most plaintive cries, expresses it's terror: however, it seldom quits it's hole till the last extremity. At length, half suffocated, it issues out, and trusts once more to it's speed for protection; but when still pursued by the dogs, and incapable of making good it's retreat, it turns on the hunters; and, with it's hair bristling like a hog, and standing on it's hind-feet, it defends itself to the last extremity with an obstinacy scarcely to be expected from such a feeble animal. Sometimes it will bite those who attempt to catch it, and wherever it fixes it's teeth it is sure to take out the piece.

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The cry of the Agouti, when disturbed or provoked, resembles that of a sucking-pig. If taken young, it is easily tamed, continues very tractable, and seldom reverts to its original wildness. In its savage state, it usually inhabits the woods, the most unfrequented parts of which are chosen by the female for the purpose of bringing forth her young; where she prepares a bed of leaves and dry grass, and generally produces two at a time. She breeds twice or thrice a year, carrying her young from one place to another, after the manner of the feline tribe. When they are three days old, she commonly lodges them in the hollow of a tree: where she suckles them but a short time, as they are soon capable of providing for themselves; from which we may naturally conclude that the Agouti is not very long-lived.

AGRIÆ. An order of quadrupeds destitute of teeth, but furnished with very long cylindric tongues which supply that defect. Of this order there are only two distinct genera; the myrmecophaga, and the manis.

AGUAPECACA. The name of a Brazilian bird of the moor-hen kind. It grows to the size of a pigeon, is very long-legged, and furnished with a beak like that of the gallinaceous tribe. Its back, and the superior parts of its wings, are brown; and the neck, breast, and belly, are of an iron-grey. In the extremity of each wing it has a sharp horn, or prickle, with which it defends itself from the injuries of its feathered companions.

AHANIGER. A name given by some authors to the fish called by naturalists *acus vulgaris*, and by others the gar-fish. The conformation of this fish, which is very long and slender, has caused it to be confounded with the syngnathus, or tobacco-pipe fish; but, when accurately examined, it appears very different, that being a true species of the syngnathus, and this of the eel or pike. See **GAR-FISH**.

AHICCYATIL. An American serpent, approaching to the nature of the hæmorrhous and rattle-snake; but exceeding the former in magnitude, and being destitute of the rattle of the latter. Its poison, however, is as subtle as that of any species of the serpent race; though capable of being expelled by the usual antidotes.

AIAIA. A Brazilian bird of the platea, or spoonbill kind, called by the Portuguese *colhorado*. In the shape of its body, and the formation of its bill, it exactly resembles the European spoonbill. It is of a pale, but very bright and glossy flesh-colour, on the back and wings; while the other parts of the body are of a beautifully white. It is commonly seen near the Brazilian rivers; and is killed for the sake of its flesh, which is very palatable.

AICUROS. A Brazilian parrot, of superior magnitude to the generality of the species, and one of the most docile of that beautiful tribe. The head of this bird is variegated with yellow, red, and violet colours; the body is green; the tips of the wings are red; and the tail-feathers are long and yellow. This bird is too delicate to exist under a less favourable sky than that of its nativity, and is therefore seldom imported into Europe; though its amazing beauty and sagacity would render it a valuable addition to the finest aviary. Clusius furnishes us with an instance of its prodigious understanding in the following narration.

'A certain Brazilian woman,' says he, 'who lived in a village two miles distant from that in which we

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resided, had a parrot of this kind, which was the wonder of the place. It seemed endued with such understanding, as to discern and comprehend whatever she said to it. As we sometimes used to pass by that woman's house, she used to call upon us to stop; promising, if we gave her a comb, or a looking-glass, that she would make her parrot sing and dance to entertain us. If we agreed to her request, as soon as she had pronounced some words to the bird, it began not only to leap and skip upon the perch on which it stood, but also to talk and to whistle, and imitate the shouts and exclamations of the Brazilians when they prepare for battle. In short, when the woman was pleased to make it sing, it sung; to dance, it danced. But if, contrary to our promise, we refused to give the woman the little present agreed on, the parrot seemed to sympathize in her resentment, and was silent and immovable; neither could we, by any means, provoke it to move either foot or tongue.'

AIGRETTA. A name used by some naturalists to express a distinct species of heron, but which seems to be no other than a synonym of the *garguane*, or *ardea alba minor*, the small white heron.

AIPIMIXIRA. An American fish, more generally known by the name of *pudiano*. This fish, which is very small, and shaped like the perch, has a purple back, with a yellow belly and sides.

AJURU CATINGA. A Brazilian parrot of the size of a common pullet, entirely covered with plumage of the most vivid green. Its eyes are of a fiery red, and the skinny circle around them is white; of which colour likewise are its beak and legs.

AJURU CURAU. A Brazilian species of parrot, of the size and shape of the common green parrot. Of this species there are two kinds. The first species, which is extremely beautiful, has a blue crown; the throat and sides of the head are of a fine yellow; the rest of the body is of a lively green; the long-winged plumes are partly black, and partly yellow, having their tips variegated with blue and green; and the tail is edged with red, black, and blue. The other species has the same colours, but differently disposed. Its head is yellow, with a whitish cast; the throat, and sides of the head about the eyes, are of a vivid yellow; and near the head there is a sea-green spot.

Exclusive of the above, there is also another species, which possesses all the colours of the first, but with an admixture of black about the head, a yellow spot on the crown, another of the same colour below the eyes, and a blue one under the throat.

AJURU PARA. A Brazilian species of parrot of a small size. Its whole plumage is of a most beautiful green colour; and its legs, beak, and circlets of the eyes, are of the purest white.

ALAUDA. A genus of the order of *passeris*, and class of aves, in the Linnæan system. See **LARK**.

ALBARDEOLA. A name given by many authors to the platea or spoonbill.

ALBATROSS. One of the largest and most formidable birds of Africa and America, abounding particularly about the Cape of Good Hope, Cape Horn, and some other places. Edwards, the ingenious ornithologist, thus describes the figure of the Albatross. The body is rather larger than that of a pelican; and its wings when extended, are ten feet from tip to tip. The bill, which is six inches long, is yellowish, and terminates in a crooked point. The top of the head is of a bright brown; the back is of a dirty deep spotted brown; the belly

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belly is white; and the toes, which are webbed, are of a flesh-colour.

Such are the leading traits in the figure of this famous bird: but these alone give us a very imperfect insight into it's history and qualities; we shall therefore investigate it's particular habits, which render it a subject of some importance to the science.

The Albatross is one of the most fierce and formidable of the aquatic tribe; not only preying on fish, but likewise on such small water-fowl as as it can take by surprize. It preys, after the manner of all the gull tribe, on the wing; and chiefly pursues the flying-fish, when driven from the ocean by the dolphin. In our northern seas, one dreary expanse, ruffled by winds, and seemingly abandoned by every class of animated nature, presents itself; but in the tropical seas, and the distant southern latitudes, the scene is filled with birds and fishes pursuing and pursued. Every different species of the gull-kind is there seen hovering on the wing, and at an immense distance from shore. The flying-fish is continually rising to elude it's enemies in the deep; but, in escaping one danger, it generally falls into another equally fatal. Just as it rises, the dolphin is seen to dart after it, though generally in vain; but the gull has more frequent success, and often catches it at it's rise; while the Albatross, pursuing the gull, compels it to relinquish it's prey. Thus the whole horizon presents one general scene of rapacity and cunning, of stratagem and evasion.

'As the Albatross,' says Wicquefort, 'except when it breeds, lives entirely remote from land, so it is often seen, as it should seem, reposing in the air. At night when it is pressed by slumber, it rises into the clouds, as high as it can; where, putting it's head under one wing, and beating the air with the other, it seems to enjoy it's ease. After some time, however, the weight of it's body, only thus half supported, brings it down; and it is then seen descending, with a pretty accelerated motion, towards the surface of the deep: on this it again exerts itself to rise; and thus, alternately, ascends and descends at it's ease. But, during these uncommon slumbering flights, it frequently loses it's equilibrium; and, falling on the deck of some ship, becomes an easy prey to the mariners.'

How far this account may correspond with simple truth, is difficult to determine; but certain it is, that few birds float on the air with more facility than the Albatross, or are capable of supporting themselves a longer time in that element. It seems unconscious of the excesses of fatigue; keeps hovering night and day on the wing, and always appears as if emaciated with hunger.

But though this bird may justly be deemed one of the most dreaded tyrants of the deep, it does not indiscriminately prey on every animal, and entirely relinquish any association with other creatures. Between the penguin and the Albatross there seems to be a peculiar affection: they are always seen to chuse the same breeding places; which are generally distant unfrequented islands, in which the ground slopes downward to the sea, the penguin being neither formed for flying nor climbing. In such situations, their nests are contiguous, as if they stood in need of mutual assistance and protection. The union preserved between these birds, and the regularity with which they build their nests, are indeed astonishing. On the Falkland islands, those bleak and desolate spots,

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where these birds had long continued undisturbed; and in no respect dreaded the encroachments of men, they seemed to make their habitations as convenient as if they expected them to be permanent: they built them with an amazing degree of uniformity, and their society resembled a regular plantation. In the middle, the Albatross raised it's nest, on heath-sticks and long-grass, about two feet from the surface of the ground; and round this the penguins constructed their inferior abodes, by making holes in the earth, the general proportion they observed being that of eight penguins round one Albatross. But as these islands are now more frequented than formerly, the penguin and the Albatross have forsaken them, and sought some more obscure retreat: a striking confirmation of Buffon's judicious remark, that the presence of man not only destroys the society of meaner animals, but likewise serves to extinguish their instincts.

ALBELEN. A fish of the truttaceous kind, called also albula, strongly resembling the ferra. It is caught in the German and other lakes, and commonly weighs from five to six pounds, though sometimes it has been found to weigh twelve. The colour of the Albelen is a fine silvery white, with some very pale striæ.

* **ALBORO.** A name by which the erythrinus, a small red fish caught in the Mediterranean, is commonly known in the Italian markets.

ALBULA. A genus of fishes of the truttaceous kind, distinguished by their being destitute of teeth.

ALBULA INDICA. A small fish resembling a herring, caught on the oriental shores, and called by the Dutch the wit-fish.

ALBULA NOBILIS. The classical name of one of the truttaceous species of fish caught in the German lakes, and in those of various other countries.

ALBURNUS. A fresh-water fish, commonly known in England by the name of the bleak. It is frequently caught in the British rivers, as well as in those of some other European countries, and is esteemed agreeable food. It is a species of the cyprinus of Linnæus; and is in the greatest perfection during the month of September. See BLEAK.

ALBURNUS LACUSTRIS. A name erroneously given by some naturalists to the ballerus of the ancients, or the pallerus and pleysta of the moderns.

ALBUS PISCIS. The white-fish; a name by which Salvian has called the capito lacustus; and which seems to be the same with the blue-chub; or, as it is more frequently called, the gontling. See GONTLING.

ALCEDO. A genus of birds belonging to the order of picæ, and comprehending fifteen species. Their distinguishing characteristics are, that the beak is triangular, thick, straight, and long; the tongue is short, fleshy, smooth, and acute; and the feet are peculiarly formed for walking.

ALCEDO VOCALIS. A name by which Bellonius, Aldrovandus, and some other authors, have called the red sparrow.

ALIC. A name applied by Gaza, in his commentaries on Aristotle, to the fish called by that author mainis, and by Ovid monereli. It seems to be of the sparus kind.

ALJARBUCHIA. The Arabian name for a large species of rat common in that country; and which is reckoned pretty salubrious food, according

ing to Bochart, who conjectures it to be the same as the schaphanmen tioned in Leviticus xi. 5. and there pronounced unclean.

ALKA. See Auk.

ALKUSSA. A Swedish name for a fish called also by the same people lake. It is a species of the silurus: and Artedi distinguishes it by the name of the silurus with only one cirrus or beard under the chin; whereas the common silurus, which is the glanus of the ancients, has four beards.

ALLELOPHAGI. A term used by some naturalists to express a peculiar genus of flies which feed on one another. They are thus called, to distinguish them from another class stiled the heterophagi, from their feeding on different substances, and not on each other.

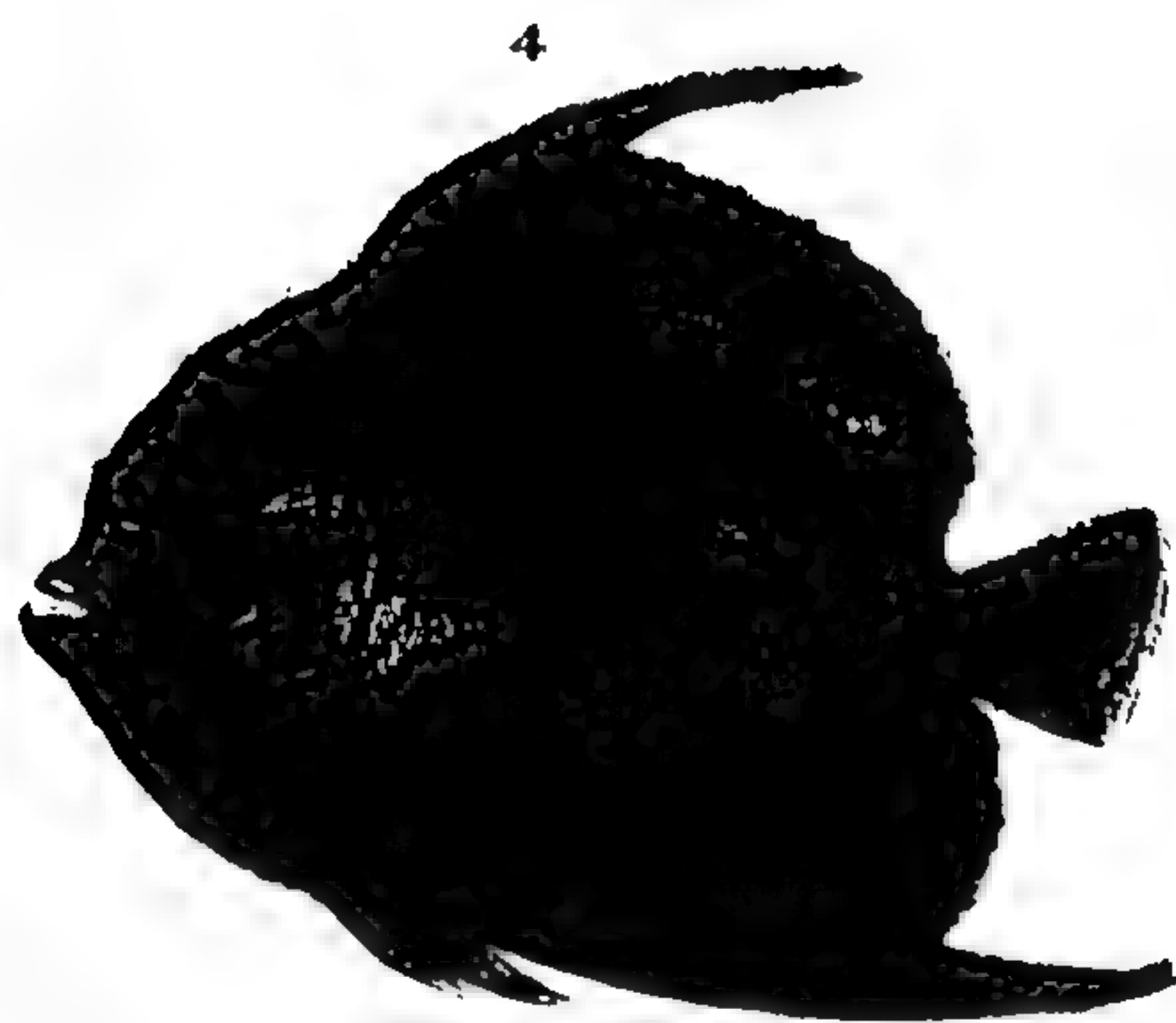
ALLIGATOR. A very formidable and ferocious animal, generally confounded with the crocodile; with which, indeed, it agrees in every essential property. This animal, which is placed at a happy distance from the more populous regions of Europe is only formidable in those countries where there are but few inhabitants. In the more cultivated parts of the earth, the large and ferocious tribes of animals are seldom seen; where their appearance would rouse a whole country at once to oppose their force, probably at the expence of many lives. Hence the crocodile, which was once so terrible along the banks of the Nile, is now far less common than in ancient times. The arts of mankind, which were naturally first applied for the means of preservation, have in a great measure triumphed over this formidable enemy; and though it sometimes makes its appearance in Egypt, it is comparatively feeble, and divested of its ferocity. To see this animal in all its native terrors, grown to a surprizing magnitude, propagated in numbers, and committing acts of perpetual devastation; it is necessary to search the uninhabited regions of Africa and America, to trace those prodigious rivers which devolve their streams through desolate and extensive realms, where the arts of civilization have never penetrated, where force alone constitutes distinction, and the savages of nature exert their strength with confidence, because with security. A considerable way up the River of the Amazons, the Niger, or the Nile, these animals are numerous and terrible, being frequently from eighteen to twenty-five feet in length, and sometimes lying as close together as a raft of timber on the Thames; where they indolently bask on the surface, regardless of the approach of enemies; since, from repeated trials of their power, they have found none whom they were unable to conquer.

We have before hinted, that the crocodile, properly so called, and the cayman or Alligator, are nearly the same. Travellers, indeed, rather than nature, have made a distinction between them; for, in their general appearance, nature, and conformation, they are entirely the same. The usual distinctions, however, between the crocodile and Alligator, are the following. The body of the crocodile is more slender than that of the Alligator; its snout running off tapering from the forehead, like that of a greyhound, while the Alligator's is indented like the nose of a lap-dog. The crocodile has a much wider swallow, and is ash-coloured; the Alligator is black, varied with white, and generally deemed less mischievous. These distinctions, however, are very slight, and can only be regarded as minute variations, which the dif-

ference of soil and climate may effect in the same species. The common length of the Alligator is about eighteen or twenty feet; however, some have been found to measure thirty feet from the tip of the snout to the end of the tail. The Jesuits at Siam dissected one of the common dimensions; and, as the description given both of its external appearance, and internal conformation, is probably the most accurate of any to be met with, we shall take the liberty to subjoin it.

This animal, it appears, was eighteen feet and a half, French measure, in length, of which the tail was no less than five feet and a half, and the head and neck about two feet and a half long. The fore-legs had the same parts and form as the arms of a man, both internally and externally. The hands, if they may be so called, had five fingers; the two last of which were destitute of nails, and terminated conically. The hinder-legs, including the thighs and paws, were two feet two inches long. The paws, from the joints to the extremities of the longest claws, were above nine inches long: they were divided into four toes, of which three were armed with large claws, the longest of which was an inch and a half; and these toes were united by membranes like those of web-footed fowls, but of a much stronger substance. The head was long, and had a little rising at the top; but the rest of it was flat, and especially towards the extremity of the jaws; and it was covered by a skin which adhered firmly to the skull and jaws. The skull was rough, and indented in several places; and about the centre of the forehead were two bony crests two inches high. The skull between these two crests was musquet proof; for, on trial, a ball marked it but slightly. The eye was very small in proportion to the rest of the body; and was so placed within its orbit, that the exterior part, when the lid was shut, was only an inch long, and the line ran parallel to the opening of the jaws. It was protected by a double lid, one within and another without: that within resembling the nictitating membrane in birds, was folded in the great corner of the eye, and had a motion towards the tail; but being transparent, it guarded the eye without interrupting the sight. The iris was very large in proportion to the globe of the eye, and of a yellowish grey colour. Above the eye was placed the ear, which opened downwards as if by a kind of spring, by means of a solid, thick, cartilaginous substance. The nose was placed in the middle of the upper-jaw, near an inch from its extremity, and was perfectly round and flat, being near two inches in diameter, of a black, soft, spongy substance, not very dissimilar to the nose of a dog; and the jaws seemed to be locked one within another. Nothing can be farther from the truth, than the generally received opinion, that the lower-jaw is incapable of motion: it moves like the under-jaw in all other animals; while the upper is fixed to the skull, and absolutely immoveable. This animal had twenty-seven cutting teeth in the upper-jaw, and fifteen in the lower, with several interstices between them; they were thick at the root, but sharp towards the point, being all of different sizes, except ten large hooked ones, six of which were in the lower-jaw, and four in the upper. The mouth was fifteen inches long; and, where broadest, eight and a half: the distance between the two jaws, when fully extended, being fifteen inches and a half; a space wide enough to admit the entire body of a man.

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1. ALLIGATOR 2. AMADAVADE. 3. ANCHOVY 4. ANGEL FISH 5. COMMON ANGLER
6. ANGLE SHADES. 7. ANOMIA.

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The colour of the body was of a dark brown on the upper part, and of a whitish citron below, with large spots of both these colours on the sides. The shoulders, to the very extremity of the tail, were covered with fifty-two large square scales disposed like parallel girdles; but, towards the tail, the distance between these circles increased. The creature was not only covered with these, but also with a coat of armour; which, however, was not proof against a musquet-ball, as had been generally believed: yet it must be confessed, that the attitude in which the animal was placed might contribute to render it more vulnerable; for, probably, had the ball struck obliquely against the shell, it would have turned off. Those parts of the girdles which were beneath the belly had a whitish hue, and were composed of scales of various shapes, but not so hard as those on the back.

With regard to the internal conformation of the animal, the gullet was large in proportion to the mouth; and a ball of wood as large as a man's head was passed up and down with facility. The guts were comparatively short, not being so long as the creature's body. The tongue, which some naturalists have falsely asserted this animal was not possessed of, consisted of a thick, spongy, soft flesh, strongly connected with the inferior jaw. The heart was about the size of a calf's, and of a bright red colour, the blood passing as well through the veins to the aorta as into the lungs. There was no bladder, but the kidneys were furnished with a duct to the anus, by which the urine was discharged. The back-bone was composed of sixty-two joints; which, though very closely united, had sufficient play to enable the animal to bend like a bow to the right and left; so that what we have been told of escaping the creature's voracious jaws, by declining from the right line, and of the animal's not being able to wheel about readily after its prey, seems to be entirely fabulous. On the contrary, it is probable, that the Alligator can turn with the utmost facility; for the joints of its back are not less pliant than those of other animals, which we know, by experience, can wheel about very nimbly when they please.

Such is the genuine account of the figure and conformation of this dreaded animal, which depopulates countries, and renders the most beautiful rivers dangerous, and even deserted. It has been seen in some places for hours, and even days, basking in the sun, and apparently motionless; so that the unwary traveller might easily mistake it for the trunk of a tree covered with a rough and dry bark: but this mistake would probably be attended with the most fatal consequences, if not timely discovered; for the seemingly torpid animal, on the near approach of any living creature, instantly darts on it with inconceivable swiftness, and precipitates it to the bottom of the river. During inundations, this unwelcome visitant sometimes enters a cottage, and seizes the first animal it sees; nor are instances very unfrequent of its having dragged a man out of a canoe, in the view of his companions, who vainly exerted their endeavours to save him.

The Alligator is prodigiously strong; and its arms, both offensive and defensive, are entirely irresistible. The shortness of its legs; the conformation of the back-bone; the muscles of the fore and hinder legs; and, in short, its whole frame, are calculated for amazing force. Its teeth are sharp, numerous, and formidable; its claws are long,

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and tenacious; but its principal instrument of destruction is its tail, with a single blow of which it is capable of overturning a common canoe. Its proper element is the water, and there it is by far the most destructive; nevertheless, it is likewise very terrible by land: it seldom, however, unless when pressed by hunger, or with a view of depositing its eggs, quits its native element. It usually floats along the surface, and seizes whatever animals come within its reach; but, this method failing, it is then compelled to venture near the shore, where it conceals itself among the sedges, in expectation of some land animal, the dog, the bull, the tiger, or even man himself, coming to drink. As the devoted victim approaches, nothing of the insidious destroyer is to be seen; nor is the retreat of the former often meditated till it is too late. The voracious animal instantly springs on its prey, with much more agility than might reasonably be expected from such an unwieldy creature; and, having secured it with its teeth and claws, instantly plunges into the water, and drags it to the bottom, where it is devoured at its leisure. Sometimes, however, the animal which the Alligator has thus surprized and seized, escapes from its grasp in a wounded state: in that case the tyrant pursues it with all its might, and often seizes it a second time; for, though heavy to external appearance, the Alligator runs with amazing celerity. It often ventures half a mile from the bank of the river; and, having regained its prey, returns with it to the river-side, where it feasts in perfect security.

In its depredations along the banks, it sometimes happens that the Alligator seizes on an animal as formidable as itself, and meets with a desperate resistance. The tiger and the Alligator, in particular, have frequent contests. A parching thirst, with which all animals of the tiger kind are continually affected, keeps them in the vicinity of great rivers, whither they very frequently descend to drink. On these occasions they sometimes meet with the Alligator; and, the instant they find themselves assaulted, they turn about with prodigious agility, and force their claws into the eyes of the assailant, who immediately plunges with its fierce antagonist into the river, where the struggle continues till the tiger submits to a watery death.

In this manner the Alligator seizes and destroys all animals, and is therefore equally dreaded by all. Man alone, who can unite reason with strength, seems capable of combating this animal with success. Labat assures us, that a negro, with no other weapon than a knife in his right-hand, and a cow's hide wrapped round his left, will boldly venture to attack this animal, even in its own element. Whenever he approaches the Alligator, he presents his left-arm with its contents, which the animal greedily attempts to swallow; but the hide sticking in its throat, the negro takes that opportunity of giving it several stabs under the lower-jaw with his knife; and the water rushing in at its mouth, which is held open involuntarily, the creature is soon swelled to such an enormous size, that its animal functions are entirely suspended.

In Siam, Alligators, or crocodiles, (which terms may be used indiscriminately) are frequently caught by the natives. In that empire, where the largest as well as most formidable animals abound, the inhabitants seem particularly fond of signaling their bravery by destroying them. They are extremely successful in taming the elephant; nor are they

they at all less fortunate in their attacks on the Alligator. In order to catch that animal, they throw three or four strong nets across some river, at proper distances from one another, so that if the Alligator breaks through the first, it may possibly be entangled by one of the next. When it first feels itself entangled in the net, it exerts its tail, the grand instrument of its strength, with its utmost force; but, after many unavailing struggles, its force is at last exhausted. The natives then approach their captive in boats, and continue to pierce it with sharp weapons in the most tender parts, till it becomes enfeebled through loss of blood. When its motion seems wholly to cease, they begin to tie up its mouth with a cord; and to fasten its head to its tail, by bending the body like a bow. However, they do not then consider themselves as perfectly secure from its fury; and, for their greater safety, they tie all its feet to the top of the back. These precautions are essentially necessary; for, were they omitted, the animal would in general soon recover strength enough amply to revenge the injury it had received.

The Alligator, when thus subdued by the taming arts of man, or bred up from its infancy, is often used for the diversion and entertainment of the grandees of the east. It is sometimes managed like a horse; and, a curb being put into its mouth, it is obliged to submit to the pleasure of its rider; and, though awkwardly formed for a beast of burden, it proceeds with a degree of swiftness not much inferior to that of some of our own less unwieldy animals.

The Alligator is frequently caught in the African rivers, by the natives, after the same manner as the shark by Europeans. They set out on these expeditions in large boats; and, affixing a piece of beef to a hook, with a strong line, the animal no sooner seizes and swallows the bait, than it is drawn along, floundering and struggling, till quite exhausted. It is then pierced in the tenderest parts of the belly; and, after having received a sufficient number of wounds, the creature is dragged ashore.

In other parts of the world, as well as in Siam, the Alligator forms an object of savage grandeur near the regal habitations. Philips informs us, that at Sabi, on the Slave coast, there are two ponds near the royal palace, in which crocodiles are bred in the same manner as carp in Europe.

Hitherto we have been describing the Alligator of desert regions, or climes at best but little explored, where native liberty sublimates its rage, and every thing endued with life is obnoxious to its rapacity; but in Egypt, and in other countries long peopled, where the inhabitants have received some degree of civilization, and the rivers are well frequented, this animal is solitary and timid. So far from venturing to attack the human species with unprovoked insolence, it sinks at the approach of man, with the utmost precipitation, and declines the contest, as if sensible of his superior force.

Through the whole order of irrational animals, a contempt for mankind prevails, till they have experienced his irresistible powers. The lion and the tiger among beasts, the whale among fishes, and the albatross and the penguin among birds, at first encounter man without dread or apprehension; but no sooner do they feel his power, than they acknowledge his superiority, and seek for shelter in the deepest recesses of nature. This

may account for the various and contradictory accounts which travellers at different periods have given us of the crocodile and the Alligator: some depicting them as harmless and timid; as ever avoiding the sight of man, and preying only on fishes; while others rank them among the destroyers of nature, ascribe prodigious strength and malignity to them, and represent them as the inveterate enemies of the human race, whose flesh they prefer to any other. Different, however, as these accounts are, they are both equally true: for, wherever the Alligator has long reigned unmolested and secure, it is there savage, bold, and dangerous; and wherever it has been harassed by mankind, it retreats invaded, and its companions destroyed, there it becomes timorous, and forgets its native rage. Indeed, in some countries, this animal, instead of being formidable, is not only inoffensive, but even cherished and admired. In the River San Domingo, the Alligators are the most harmless creatures in nature; the children play with them, ride upon their backs, and even beat them, without receiving the smallest injury.

The musky smell of these animals may probably render them grateful to the savages of that part of Africa; and, indeed, they are often known to cut off the parts of the Alligator which contain the musk, and to wear them about their persons as the choicest perfume. Travellers are not agreed where these musk-bags are situated; some placing them in the ears, and others in the parts of generation: the most probable opinion is, that this musky substance is contained in the glands of the arms and legs. But from whatsoever part of the body this odour proceeds, it is very strong and powerful, tincturing the flesh of the whole body of the animal with its taste and smell. The Alligator's flesh, at best, is but very indifferent food; and, unless the musk-bags are separated from it, is almost intolerable. Even the negroes themselves can scarcely digest the flesh, but the egg is by them esteemed a most delicious morsel.

Among the most savage nations there is always some degree of epicurism to be met with; and those who possess this quality spare neither pains nor danger to procure their favourite repast: for this reason, they often watch the place where the Alligator comes to deposit its eggs, and seize on the booty the instant they can take it with safety. The Alligator always breeds near fresh-water rivers; and though it is sometimes found in the sea, that may rather be considered as a place of excursion than of abode. It produces its young by eggs, as has been already hinted; and for this purpose the female chuses a place by the side of a river, or some fresh-water lake, in which to deposit her brood. She always seeks out an extensive sandy shore, where she may dig a hole without danger of detection. The shore must also be smooth, and rather shelving to the water, for the greater convenience of the animal's going and returning; and an easy path is also sought near the verge of the stream, by which the young may have readier access. When these preliminaries are adjusted, the animal is seen cautiously stealing on shore, to deposit her burden. The presence of a man, a beast, or even a bird, is sufficient to deter her; and if she perceives any creature in sight, she always returns: but, should nothing intrusive appear, she proceeds to scratch up the sand with her fore-paws, making a pretty deep hole, where she deposits from eighty to a hundred eggs, of the size of

of a tennis-ball, and of the same figure, covered with a tough white skin resembling parchment. This task she performs in about an hour: after which, she covers her eggs with the utmost care and art, and leaves them till the next day; when she uses the same precaution as before, and lays about the same number of eggs; and, the day following, as many more. At last, having deposited her whole quantity, and carefully concealed them in the sand, they are soon vivified by the heat of the sun; and, at the expiration of thirty days, the young begin to burst their shells. At this time the female appears to be instinctively taught that her young require relief; and she therefore proceeds to scratch away the sand, and to set them at liberty. Her brood, quickly availing themselves of the freedom they have gained, part of them naturally run to the water; while the more feeble ascend the female's back, and are carried thither in greater security. But no sooner do they arrive in the water, than both the female and the male immediately become their most formidable enemies, devouring as many of them as they can. The whole brood is scattered up and down at the bottom of the river; by far the greatest part are destroyed; and those who survive escape either through their extreme minuteness or superior agility.

Nor is the propagation of the Alligator obstructed by it's own species alone; the eggs are not only a delicious feast to the savage, but are eagerly sought after by every beast and bird of prey. The ancient Egyptians worshipped the ichneumon as a deity, because of it's success in destroying the eggs of the Alligator. At present, however, that species of vulture called the gallinazo is it's most potent enemy. All along the banks of great rivers, in the tropical regions, the Alligator propagates it's species in such numbers that, were it not for the vulture, a carnivorous bird which seems appointed by Providence to abridge their fecundity, the earth would soon be over-run with them. These birds are ever found in greatest numbers where the Alligators are most numerous; and, hiding themselves within the thick branches of trees which overshadow the banks of rivers, they there watch the female in patient silence, and permit them to deposit their eggs in the sand without interruption: but no sooner are they retired, than they provoke one another to the spoil; and, flocking round the hidden treasure, tear up the eggs, and devour them in an instant. Nor are they less diligent in their attendance while the females are conducting their young to the water; for, should any of them drop by the way, they are sure to be immediately devoured by the vultures.

Such are the extraordinary accounts given us by modern travellers of the propagation of this animal, which have in general been adopted by Linnaeus, and the most inquisitive naturalists of the age, particularly Ulloa: yet, were we disposed to argue from the general analogy of nature, the Alligator's devouring her own young as soon as she has conducted them to their natural element, seems very doubtful, and even improbable. The general idea of this animal's rapacious cruelty may have given birth to the story; whereas, in fact, the Alligator seems no more mischievous than other animals, but in proportion to it's superior strength. It is highly probable that it possesses the same sensations of parental tenderness as other animals; at least, we are not furnished with sufficient evidence to the contrary.

To what age the Alligator's life may be protracted, we are not certainly informed: however, if we may credit Aristotle, the Alligator is coeval with man. But the ancients, either from a blind credulity, or a love of amusive fables respecting this animal, have invented so many fictions, that even truth from them becomes suspicious. What we know for certain from the ancients is, that, among the various animals, which fought in the amphitheatre at Rome, the Alligator was not wanting. M. Scaurus produced them alive in his unrivalled exhibitions; and such was the state of luxury and enervation into which the Romans were then fallen, that they regarded him as the best citizen, because he amused them with the most extravagant entertainments.

ALLIGATOR, OPEN-BELLIED. This animal has nothing essentially different from the rest of the species, except an open purse or pouch in the middle of it's belly, which seems designed by nature as a retreat for it's young in time of danger; a circumstance which strongly inclines us to believe that the Alligator is not so unnatural as it is commonly represented. Except in this singular distinction, this animal has all the common marks of the Alligator already described: namely, a particularly strong, square covering of scales on the back; which, in the young ones, appears distinct and regular; but, in the old, becomes knobbed and rough; and in having small round and oval scales on the sides, and a scaly belly. It is also furnished with fins on the outsides of it's fore and hinder legs; and with two rows of fins on the superior part of the tail, which begin extremely small at the setting on of the tail, and increase gradually as they advance towards the middle, where they unite, and so continue to the extremity. The tail is roundish at it's beginning; but, from the middle, where the two rows of fins unite, it is flatted like an oar. The fore-feet have each of them five toes, but the hinder only four; a distinction common to the crocodile tribe. In the fore and hinder feet, only the third and fourth toes are webbed together. The eyes are very prominent, and are so contrived as to be elevated above the water while the rest of the animal is wholly under it; in order, probably, to watch it's prey less perceptibly on the surface of the water, or on the banks and shores of rivers. The head is covered with several scales; and the snout is finely creased transversely. Mr. Edwards was the first naturalist who ever described or noticed this species.

ALOPECIAS. A name of the *vulpes marina*, or sea-fox.

ALOPECOPITHECOS. A name derived from the Greek; used by Aldrovandus and others to denote that singular animal the opossum.

ALOPEX. A species of dog distinguished by a straight tail tipped with black, commonly known by the name of the field-fox.

ALOSF. A kind of fish resembling the sardine or pilchard, but much larger. Some affirm it to be the same with the shad; but it is evidently another species of fish, and very scarce in Britain. It is one of those called passage-fishes, or fish of a season, because it never enters the rivers except in the vernal months. The roes of this fish being held in as high estimation in the East Indies as those of the sturgeon in Russia, they form a very lucrative article of commerce, and are often served up at the tables of Asiatic luxury.

ALPAGNA. An animal which resembles the llamas

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llamas and vigognas, except that it's legs are shorter and thicker, and it's muzzle fuller and flatter, and formed more like the human face. In Peru, the place of it's nativity, it is reckoned among the beasts of burden, and is capable of carrying about a hundred weight. The Peruvians make stuffs, ropes, and bags, of it's wool, and various mechanical instruments of it's bones.

ALPHESTES. A fish called by some cinædus, approaching nearly to the turdus or wrasse kind; but the rays or nerves of it's back-fins are prickly down to the very tail, whereas the turdus has only the anterior rays of that fin prickly, the rest being smooth. It is a small fish, and is always caught about the shores, and among the rocks. It's back is purple; it's sides and belly are yellowish; and it's mouth is small, and furnished with thick and fleshy lips.

ALTAVELA. A flat cartilaginous fish of the aquila marina species; but having it's wings, or more properly it's sides, thin, flat, broad, and obtuse, towards their extreme parts. From the strong resemblance these flat sides bear to wings, the fishermen have adopted a notion that this fish can fly. The flesh is solid and well-flavoured, and generally sells at a very high rate. It is caught on the shores of the Mediterranean, and is frequently exposed to sale in the Italian markets.

ALUCO. A name by which some naturalists have distinguished the common white owl; or, as we usually call it, the barn or church-owl.

ALUNGU. A Malabar word used to express an animal resembling a lizard, except at the head and tail, which are both pointed. It is nearly six feet long, and two broad; and is unquestionably a species of the manis of Linnæus, belonging to the tribe of ant-eaters which are destitute of teeth, but are furnished with long, round tongues, with which they collect the ants.

AMADAVADE. A curious little bird about the size of the crested wren, having a bill like a chaffinch, and spurs like a lark. The bill is a beautiful red, except on the upper part of the upper chap, where it is black in the middle; the upper part of the body is brown; the rump is of a dark red; and the prime feathers of the wings are black; as are also those of the tail, which are longest in the middle, and gradually slope to the sides. The prime and covert feathers of the wings are marked with several small white spots, and the breast and belly with larger black ones.

AMALOZQUE. An appellation under which Nieremberg describes a large Mexican bird. It frequents lakes and rivers, though not furnished with webbed feet, one of the common characteristics of aquatic birds. The breast, belly, and the under-part of the wings, are white; the tail is variegated with black and yellow; and two black circles, a finger's breadth asunder, surround the neck and breast. The beak is very long and slender; and the insects common to marshy places are it's usual food.

AMEIVA. A Brazilian species of lizard resembling the taraguira, but having a double tail. Such is the account Maregrave gives us of this animal; but Ray very judiciously questions the fact, and seems to doubt whether there is any such species in nature. Probably what Maregrave observed was only an accidental variety of the taraguira, or some other common lizard; or perhaps it's peculiarities originated from some external injury, or may be ascribed to a lusus naturæ.

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AMERICAN SEA SUN CROWN. A name given to a marine insect, because of the resemblance it bears to the corona solis. A particular description of this animal was given by Dr. Peyssonnel in the Philosophical Transactions of 1758. That gentleman, however, could not acquaint us with it's modes of life, or what it's mechanism was; not being able, from his own confession, to distinguish a mouth, or any viscera, nor any other probable organ by which it could receive nourishment.

AMERICIMA. A Brazilian species of lizard, of very small dimensions, scarcely measuring more than three fingers breadth in length, and of the thickness of a swan's quill. It's body exhibits a square appearance; it's whole back is covered with deep, grey scales; it's head, legs, and sides, with brown ones; and it's tail with blue: all which are extremely glossy and smooth to the touch. It's feet are very little thicker than hog's bristles; and it is generally esteemed venomous.

AMMOCOETUS. A name given by Gesner, and some other naturalists, to the ammodytes or sand-eel, called also tobianus by Schoneveldt.

AMMODYTES. A genus of fish, the characters of which, according to Artedi, are the subsequent. The branchiostege membrane contains on each side seven bones; but these, however, are in a great measure concealed by the laminae of the bronchia; the head is compressed; the body is oblong and slender, nearly cylindrical, but a little compressed, and destitute of belly fins. This fish is of the malacopterygious, or soft-finned kind. The other characters of the species enumerated by Artedi, are these: the lower-jaw is largest; the lateral lines are double, or two on each side; the pectoral fins have each twelve rays; the back-fin has fifty-four; that of the anus has twenty-eight; the tail is bifid, and has fifteen long rays; the mouth is destitute of teeth; and the anus is nearer the tail than the head. To this fish the inhabitants of Great Britain give the name of the sand-eel. It is commonly found at about half a foot deep under the sand, when the tide ebbs; and is caught with iron hooks, with which the fishermen pull it out. The name is derived from Ammos, Sand; and Dytes, a Diver; expressing a quality peculiar to this animal, that of diving into or hiding itself in the sand. This genus is referred to the order of apodes in the Linnæan system.

AMMODYTES. A species of serpent called also the serpens cornutus. It is nearly the size of the viper, and is of a yellowish or sand-colour. It's head resembles that of the viper, except that it's jaws are wider: and in the upper part it has a kind of wart, like an excrescence, supposed to represent a horn; whence it's appellation of serpens cornutus, or the horned serpent. It is found in Lybia, and in some parts of Italy; where it is called the ammodytes, or sand-snake, from it's sand-like colour, as well as from it's quality of sometimes running under the sand.

AMMODYTES OF CEYLON. A very large and dangerous species of serpent; it's mouth being furnished with a great number of very sharp teeth. The eyes are large and sparkling; and the forehead is covered with small round scales of various colours; some yellow, others red, and the rest variegated with red and black: the body, both above and below, is of a whitish ash-colour; and on the back are angular spots variegated with white and brown. The scales on the upper part of the body

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body are placed like net-work, with large interstices; and the tail is spotted with brown, terminating in a bony point.

AMOGLOSSUS. The classical name of a peculiar kind of flat-fish somewhat resembling the foal, and known in several parts of England by the title of the lantern. It's body is very slender, pellucid, and white; it never exceeds three inches in length; and is extremely smooth, being covered with a great number of very thin scales, which fall off on touching them.

AMORE. A genus of fish, of which there are three species; the Amore Pixuma, the Amore Guacu, and the Amore Tinga.

The Amore Pixuma has a very broad head, and a large mouth, but is destitute of teeth. It's body is oblong; it's back and sides are of a dusky iron colour; it's belly is white and protuberant; it's skin is soft; and it is furnished with seven fins, exclusive of the tail, which is rounded at the end.

The Amore Guacu is of an oblong figure, like the former, and grows to about six inches in length. The head is thick, the gills are large, and the mouth is furnished with small teeth; the eyes are small, the pupils being large, and the irides of a yellowish hue. This fish has likewise seven fins, besides the tail, which is long, and rounded at the end. It is covered with pretty large scales, and is of a rusty iron colour, but somewhat paler on the belly than in any other part.

The Amore Tinga is of the same shape with the Amore Guacu, but is much smaller, and covered with whitish scales, studded with brown spots. The tail is brown, and waved with different shades of that colour.

All the three species are esteemed wholesome food, though the first generally obtains the preference. They are natives of the American seas, and very numerous on the Brazilian coasts.

AMPELIS. In the Linnæan system, the name of a genus of birds of the order of passeræ; the distinguishing characteristics of which are, that the tongue is furnished with a surrounding rim or margin, and that the beak is of a convex and straight figure. This genus has seven species.

The word Ampelis is also used by some naturalists to signify a bird of the magpye-kind, called by others the garrulus Bohemicus.

AMPHIBIA. The third class of animals, whose distinguishing characteristics, are, according to Linnæus, that they have either naked or scaly bodies; that they are destitute of grinders, or dentes molares, the other teeth being sharp and pointed; and that they are without radiated fins. The heart has but one ventricle, and they respire through their lungs.

This class is subdivided into three orders; namely, reptiles, serpents, and the swimming amphibia, comprehending twenty-four genera and two hundred and eighty-nine species.

AMPHISBÆNA. The name of a genus of serpents in the Linnæan system. The Amphisbæna, or the double-headed serpent, is remarkable for moving either backwards or forwards with equal facility; and from hence it has been thought to have two heads. This error in part originated from the thickness of the tail, which, at a distance, may easily be mistaken for another head: on a more minute inspection, however, the error becomes apparent, and the animal is found to be formed according to the usual course of nature. Both extremities are nearly of an equal thickness; the co-

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lour of the skin resembles that of the earth, and is rough, hard, and covered with various spots. Some have affirmed that it's bite is dangerous; but this is evidently a mistaken opinion, as it is destitute of the fangs, and consequently wants the means of preparing the venom. Indeed, this animal is only formidable from it's similitude to the viper.

Linnæus enumerates two species of Amphisbæna; which he distinguishes by the names of the fuliginous, and the white, both natives of America.

AMPHISBÆNA AQUATICA. A name given by several naturalists to that long and slender insect called the seta aquatica, and vermis setarius. It receives the name of Amphisbæna from it's peculiar property of having both a progressive and retrograde motion, which it performs with equal celerity. It's usual length is four or five inches, and it's thickness about that of a fine horse-hair.

The ingenious Lister, in prosecuting his enquiries into the history of a very different sort of insect, discovered the origin of this worm. Dissecting one of the common black-beetles dug up in a garden, he perceived two of these hair-worms, or Amphisbæna, in it's belly; and, repeating his experiments, he found that the black-beetle usually contained two or three of these little animals, which crawl out immediately on opening the body. The creatures, when put into water, swim about very nimbly for a considerable time: but often thrust their heads above the fluid, as if desirous of escaping; sometimes fastening with their mouths on the sides of the vessels in which they are immersed, and drawing their whole bodies after them.

The Amphisbæna Aquatica is commonly found in the water, as it's name imports; but it is frequently met with in the earth, and sometimes on the leaves of trees and shrubs in hedges and gardens.

AMPHITRITE. A small naked sea insect, of an oblong figure, with only one tentaculum which is like a piece of fine thread. There are several species of the Amphitrite; some of which are marginated, and variously indented, so as to resemble quills.

AMPHODONTA. Such animals as are furnished with teeth in both jaws.

AMPULLACEÆ CONCHÆ. A name by which some naturalists have expressed a genus of shells, called by others conchæ globosæ and dolia, and by the French naturalists tonnes. See DOLIUM.

AMYGDALA. The name of a species of echinus marinus, of the genus of brissoides.

AMZELL. A name applied to a bird of the merula or blackbird kind, of which there are three species; viz. the Ring or Rock Amzell, or merula terquata; the merula montana, or Common Amzell; and the merula rosea, or Rose-coloured Amzell.

The Ring Amzell is very little larger than the blackbird. It's back is of a dusky blackish brown; it's throat and breast are beautifully variegated with spots and streaks of white; and the lower part of the throat is adorned with a fine white ring, whence the bird obtains it's name. This ring is of a lunated shape, the points terminating at the sides of the neck. The wings and tail are of a blackish hue; but somewhat varied with a greyish white in the female. This bird is common about the Peak in Derbyshire, and is there called the rock ouzel.

The Common Amzell differs from this last, in not having any ring about it's neck; that part being

variegated with a brownish red intermixed with black spots.

The Rose-coloured Arctifil is common in Lapland and some other European countries, but is seldom found in Great Britain. See Ouzar.

ANABLEPS. In the Artedean system, the name of a new genus of fish of the malacopterigian kind; the distinguishing characteristics of which are, that the branchiostegic membrane contains six bones, and there is only one small fin at the extremity of the back. Of this species of fish there are but few specimens extant. The Anableps is a species of the cobitis in the Linnaean system.

ANACA. A Brazilian species of parrot, about the size of a lark. The beak is brown and hooked; the crown of the head is covered with liver-coloured feathers, and there are circles of brown ones near the eyes. The throat is grey; the upper parts of the neck and sides are green; the belly is of a reddish brown; the back is green, with a pale brown spot; and the tail is likewise of a pale brown. At the top of each wing is a deep blood-red mark; and the other parts of the wings are green, except their extremities, which have a blueish tinge. The thighs are covered with green feathers, and the legs and feet are grey.

ANACANDAIA, or ANACONDA. A Ceylonese serpent of enormous magnitude, extremely mischievous among cattle; whence it has also obtained the name of bubalinus.

The following strange account of the Anaconda, said to be written by an English gentleman resident in the East Indies, and signed R. Edwin, was inserted in the Edinburgh Evening Courant of August 15, 1768, and from thence found its way into most of the English periodical miscellanies. We give it, therefore, rather as the only particular account we have been able to obtain of this astonishing serpent, than as one on which we can think of hazarding our own veracity.

* Some years since the commands of my directors carrying me to Ceylon, to transact an affair of no little consequence, I had an apartment prepared me on the skirts of the principal town, facing the woods. At some distance from my window there was a rising ground, on which stood three or four large palm-trees, that afforded me every morning, as I lay in bed, a delightful prospect. One morning, as I was looking at these, I saw, as I thought, a large arm of one of them in strange commotions, bending and twisting about (but there was no wind) and often striking one end to the earth, then raising it again, and losing it among the leaves. I was gazing at this with great amazement, when a Ceylonese coming in, I begged him to look and wonder with me. He looked, and was more amazed and terrified than myself. In short, a paleness overspread his whole face, and he seemed almost sinking to the earth with terror. He conjured me to bar up all my doors; and then told me, that what appeared an arm of the tree, was in reality a serpent of that monstrous size, diverting itself with its various contortions, and now and then darting down to the earth for prey. I soon found the truth of what he told me; and, looking with more circumspection, saw it seize a small animal and take it up into the tree. Enquiring farther about this strange sight, the Ceylonese told me that the only wonder was, that the creature was so near us; for it was a serpent but too well known in the island, though it usually kept in the inland parts and

woods, where it often dropped from the covert of a large tree, and devoured the unwary traveller. A relation so strange as this could never have gained credit with me, had I not, at the same instant, perceived a creature capable, from its size, of doing even more than was related. The monster continued to divert itself; and we assembled in a body of twelve, all on horseback and well armed, to destroy it. We rode up towards the place: but, that we might not expose ourselves to unnecessary danger, we surrounded the ground, and rode behind a close thicket, from whence we might, unseen, level our fire-arms. It was by this time the heat of the day; and, when we arrived, we found it so much larger than we had conceived, that every man of us wished himself safely at home, and it was a long time before any one had the resolution to fire. We had now time to observe the creature; and, believe me, all the descriptions of monsters of this kind hitherto given are trifles, when compared with what we saw. The natives agreed that it was much larger than any they had ever seen, and such a mixture of horror and beauty blended together, no eyes but those which saw it can conceive. The creature was more than as thick as a slender man's waist; yet seemed far from fat, and very long in proportion to its thickness. It often hung by its tail from the highest boughs of the tree; and being most surprizingly nimble, was now diverting itself, in the heat of the day, with a thousand gambols round the branches of the tree: sometimes coming down, twisting its tail round the bottom of the trunk, and darting itself to its whole length around. In the midst of one of these gambols, we were surprized to see it get up in haste into the tree. But the cause soon appeared: a small animal, of the fox kind, but not like our English foxes, immediately approached; which the serpent having seen coming, took this way to be prepared for it; and, darting down on the unwary creature from the tree, swallowed it in an instant. Then licking its chops, with a broad double tongue of a blackish colour, it laid itself at full length on the ground, but with its tail still twisted round the tree. In this posture I had leisure, with horror, yet with admiration, to behold it. It was covered with scales like those of a crocodile, all ridged up in the middle; its head was green, with a vast black spot in the middle, having yellow streaks round the jaws; it had a yellow circle like a golden collar, round its neck, behind which was another great spot of black; and its sides were of a dusky olive colour. Its back was more beautiful than can well be imagined: down the middle of it was a broad chain of black, curled and waved at the edge; and, round this, all the way, a narrow one of flesh-colour, the outside of that having a very broad one of a bright yellow, waved and curled in various inflexions, and spotted all over at small distances, with great round and long blotches of a perfect blood colour. Its head was very flat, but extremely broad; and its eyes were monstrously large, bright, and terrible. These were the colours as it lay motionless; but, when it moved about in the sun, it was a thousand times more beautiful: the colours, according to the several shades of light, presenting the eye with a vast variety of hues, and in many places looking like the changeable colours in silks.

* We now all levelled at it as it lay, and fired at its head; but, whether it accidentally moved just at that time, or our fears made us take bad aim, or what-

whatever else might be the cause, we either missed or never hurt it. In short, the animal took no notice of our fire; and, after a consultation, we all agreed to make no farther attempt, till we had engaged a stronger party for the next day.

The Ceylonese seemed to know the creature well: they called it the Anaconda, and talked of eating it's flesh when they caught it; which they had no small hopes of doing, as it seldom quits, for a long time, any tree it once chuses for it's dwelling. I detained them to dine with me; and the afternoon was spent in relating the amazing things which one or other of the company had seen this sort of monster perform; in short, they told me a thousand circumstances which far exceeded my credulity. But what I myself beheld the following day, went as much beyond all they had told me, as what they had related seemed to exceed truth and probability.

The next morning, having assembled to the number of more than a hundred, we had the pleasure, if I dare call it so, of finding our enemy still at his old post. He seemed very fierce, and hungry, and we soon had an opportunity of perceiving the amazing effects. There are great plenty of tygers in this country; and one, of a prodigious size, being not much less than a common heifer, now came under our serpent's tree. Instantly we heard a dreadful rustling; and, swift as thought, the serpent dropped upon it, seizing it across the back, a little below the shoulders, with it's horrible mouth, and taking in a piece of the back bigger than a man's head. The creature roared with agony; and, to our unspeakable terror, was running with it's enemy towards us. It's course, however, was soon stopped; for the nimble adversary, winding it's body three or four times round the tyger's, girt it so violently, that it fell down in an agony. The moment the serpent had fixed it's folds, it let go the back of it's prey; and, raising and twining round it's head, opened it's own mouth to the full extent, and seized the whole face of the tyger, biting and grinding it in a most horrid manner, and at once choaking and tearing the creature to pieces. The tyger, on this, reared up again; and words are too poor to paint it's agony! It writhed and tossed about, but all in vain; the enemy, wherever it went, was still with it, and it's hollow roaring within the destroyer's mouth was dreadful beyond expression. I was for firing on the monster in this state: but my companions protested against it, telling me they knew it's custom so well, that they were very sure of mastering it in the end, without any trouble or hazard; but if they were then to disturb it, the animal would be so outrageous that some of our lives must assuredly pay the forfeit. They seemed to know so well what they were about, that I readily acquiesced. Several of us spent the whole day in observing this strange spectacle; and, surely, the agonies of the tyger were beyond all that can be conceived, and it's death more horrid than a thousand other deaths with all their tortures united! The tyger was a very strong and fierce creature; and, though unable to hurt or get rid of it's cruel enemy, gave it prodigious trouble. A hundred times would it rear up, and run a little way; but soon fell down again, partly oppressed by the weight, and partly by the folds and wreathed twists of the serpent round it's body. But though the tyger fell, it was far from being entirely conquered, or at all manageable. After some hours, it seemed much spent, and lay as if dead; when the serpent, which had many times violently girded

itself round the tyger, vainly attempting to break it's bones, now quitted it's hold, twisting it's tail only round the neck of it's prey, which was in no condition either to resist or escape. It made towards the tree, dragging with some difficulty it's victim after it; and now appeared the double use of the tree to the serpent. Nature seems to instruct this creature that, though it can conquer such large animals, their bodies are too thick for it's swallow, and it must therefore break their bones, and reduce them to a soft mass, before it can manage them. This it usually does, (as we saw attempted on the tyger) by girding the body very firmly round, and then crushing it to pieces: but, when that method proves ineffectual, it has recourse to the tree, as we now had opportunity of observing. Having by degrees dragged the tyger to the tree, and the animal being unable to stand, the serpent seized it lightly a second time by the back, and set it on it's legs against the trunk of the tree; then, winding it's body round the tyger and the tree together several times, it girded both with such violence, that the ribs and other bones began to give way: and, by repeated efforts of this kind, it broke all the ribs, one by one, each of which gave a loud crack in breaking. It next attempted the legs, and broke them severally in the same manner, each in four or five different places. This employed many hours, during all which time the poor tyger remained alive; and, at every crack of the bones gave a howl, not very loud, but piteous enough to pierce the most obdurate heart, and make even man forget his natural antipathy to the tyger, and pity it's misery. After the legs, the serpent attacked the skull in the same manner: but this proved so difficult a task, that the monster, overcome with fatigue, and seeing it's prey in no condition to escape, left it for the night at the foot of the tree, into which itself retired to rest. This gave us an opportunity of going home; and, for my own part, I could not sleep for thinking of the poor tyger, which was naturally so strong and vigorous that we left it still alive, though broken and mangled in this miserable condition.

In the morning, on returning to the thicket, we beheld a surprizing change: the body of the tyger, which now seemed one red lump of shapeless matter, was dragged to some distance from the tree, and shone all over as if covered with glue or jelly. We soon plainly discovered the meaning of all this, the serpent being still employed in producing that appearance. It had laid the legs one by one close to the body, and was now placing the head straight before, licking the body, and covering it with it's slaver; which, coating it over like a jelly, rendered it fit for swallowing. Much time was employed in this business: but, at length, the serpent having prepared the whole to it's mind, drew itself up before it's prey; and, seizing the head, began to suck that, and afterwards the body, down into it's throat. This was the work of so much time, that I left the monster struggling at the shoulders when I went home to dinner; and, by the accounts of those who staid to watch, it was night before the whole was fairly swallowed.

The following day, we assembled for the last time: when the very women and children followed; convinced that, as it had gorged it's prey, there was then no danger. I was by no means satisfied of this till I reached the place, but then found it very true. The serpent had so loaded it's belly, that it could neither fight nor retreat. It attempted, on our approach, to climb the tree; but, being

unable, was soon dispatched, by striking it on the head with large clubs. I then measured it, and it's length was thirty-three feet four inches. Being immediately cut up, it's flesh appeared whiter than veal; and, from the report of those who eat it, was far more delicious than any flesh they had ever before tasted.

ANADROMUS. A term of distinction in ichthyology, serving to denote such fishes as have their stated periods of going from the fresh-water to the salt, and afterwards returning to the fresh-water again; of which kind are many of the truttaceous species.

The method nature seems to have decreed for their course of changes seems to be the following: they are first produced from the spawn in fresh-water rivers, where they continue till they arrive at a proper size, and acquire some strength; after which they seek the salt-water, in order to feed more at large, and attain to their full dimensions. At this period they return to the freshes, to deposit their spawn, that their young brood may have the same advantages of spending their adolescent state in more security; when they again revisit the sea.

The term is derived from the Greek words, Ana, Back again; and Dromos, a Course.

ANARRHICAS. The Artedian name of a fish called by others the lupus marinus. In the Linnæan system, it is a genus of the order of apodes.

ANAS. In the Linnæan system, the name of a large genus of birds of the general order of anferes. The distinguishing character of this genus is, that the beak is convex, terminating in an obtuse point; such as the swan, the goose, the widgeon, the duck, &c.

ANAS CAMPESTRIS. The name of a bird common in France, usually called the tetrax and canne petriere. It is of the size of the pheasant, and of the nature of the bustard, having no hinder toe. It runs very swiftly, makes it's nest on the ground, and sits in the water after the same manner as the duck, from which circumstance it derives it's name.

ANATIFERÆ CONCHÆ. The name of a genus of shells of the multivalve kind. These shells are quinquivalves; and are composed of two large valves, with two smaller ones beneath them, and a long, narrow, spur-like valve, which connects them, and runs lengthwise. The cabinets of the curious furnish only four species of this genus.

The Latin name Anatifera is derived from the fabulous story of their becoming geese; whence, also, the English name barnacle, as they were supposed by our credulous progenitors to breed the barnacles or brent-geese.

ANCHOVY. A well-known small fish much used in sauces, as it's name implies both in the Spanish and Italian languages. Scaliger describes the Anchovy as a species of the herring, about a finger's length, having a pointed snout and a wide mouth with serrated gums instead of teeth; others make it a species of the sardine or pilchard; but modern naturalists, with better reason, esteem it a peculiar species, very different from either.

The genuine Anchovy is caught in prodigious quantities in the Mediterranean; and particularly at Gorgona, a small island west of Leghorn. It is likewise found on the coasts of Catalonia and Provence, and sometimes on the western coasts of England and Wales. Anchovies are chiefly fished for in the night; when a light being put on the stern of the fishing vessels, they flock round, and are taken up with nets. But then it is as-

serted, though we cannot say with what degree of credibility, that the Anchovies taken in this manner are neither so good, so firm, nor so proper for keeping, as those which are caught without this expedient.

When the heads of the Anchovies are cut off, and their gills and guts taken out, they are salted and barrellled. The common way of eating them is with oil and vinegar, after stripping them of their bones, fins, and tails. Being put on the fire, they dissolve in any liquid; or they may be made into sauce, by mincing them with pepper and other spices. Some pickle Anchovies in small earthen pots of two or three pounds weight, which they cover with plaister to preserve them the better. Anchovies should be chosen small; externally white, and internally red: they should also have round backs; such as appear flat being only a substitution of sardines. Besides these qualities, the pickle, on opening the barrels, should be well-tasted, and retain it's original flavour.

The Anchovy seldom exceeds six inches in length. It's body is slender, but thicker in proportion than that of the herring; the eyes are large, the irides being white with a yellowish cast. The inferior jaw is considerably shorter than the superior; the teeth are small, one row in each jaw and another on the middle of the tongue; the tongue has a double ciliation on both sides; and the dorsal fin, which consists of twelve rays, is placed nearer the head than the tail. The scales are large and deciduous, the back is green, and somewhat pellucid; the sides and belly are silvery, and the tail is bifid.

ANDIRA, or ANDIRA GUACU. A Brazilian species of bat, the largest of which is as big as an European pigeon. The Andira are frequently called horned bats, from a sort of excrescence or pliant body above their beaks. Some of them are accounted very dangerous; as they get into chambers during the night, and open with so much subtlety the veins in the feet of those who are asleep, that the mischief is not perceived till the effusion of blood, which it is often difficult to stop, occasions a discovery. The tongues and hearts of these animals are supposed by the natives to possess poisonous qualities.

ANDORHINA. A name by which the Portuguese in the Brazils call the Brazilian swallow, more usually known by it's Brazilian name tapera.

ANEMONIES, SEA. A species of the actinia; the natural history of which has lately been ably elucidated by the Abbé Dicquemarre, who has discovered four or five different species. They vary considerably in their size, shape, and colour, but are generally found to resemble a truncated cone: and many of them are of an uniform colour, while others are striated with regular, and some with irregular spots. They are found adhering to rocks or stones in the sand, or in oyster-beds; and they are observed to stretch out their limbs and mouths, in order to seize whatever touches the surface of the sand where they lodge. This accurate observer could easily distinguish these animals from plants, by their progressive motion; by the means they employ to secure their prey, and to defend themselves; by their deglutition, digestion, and evacuations; and also by the propagation of their species. He accordingly places them among the number of spontaneous animals. The Anemonies have a surprizing power of reproduction; for, by many experiments, this property has been ascertained, which the Abbé conjectures arises from

from their gelatinous texture. Their limbs budded out successively, after several amputations: nay, some of them being dissected through the body, the basis, together with that part of the stump which was left, survived; and projected new limbs, and the animals soon began to move, and eat bits of muscles, their usual food. They appear to have a considerable degree of heat; and to live in a vacuum, or at least in a very rare air; and, for a considerable time, they require no other subsistence than what they find disseminated in the salt-water.

The Anemonies are irritable to a very high degree; and they are excessively affected by the light, though to appearance they have no eyes: the Abbé has accordingly made use of them to indicate the different changes of temperature in the atmosphere; and of this new kind of barometer he favours us with the subsequent account.

The sea-water in which the Anemonies are for this purpose placed must be daily renewed; this must be their only nourishment; and the observation should be made at intervals equally distant from the time of each renewal. If the Anemonies be shut up and contracted, there is reason to apprehend an approaching storm; that is, high winds, and consequently an agitated sea—when they are all shut, but not remarkably contracted, they indicate weather somewhat less boisterous; but, nevertheless, attended with gales, and a rough sea—if they appear in the least open, or alternately and frequently opening and closing, they indicate a medium state both of the winds and waves—if they are quite expanded, tolerably fine weather, and a calm sea, may be expected—and when their parts are considerably extended, and their limbs divergent, they infallibly prognosticate fixed fair weather, and a very temperate sea. The glass in which they are deposited should be swung at sea, in the same manner as the compass, that the rolling of the ship may agitate the water as little as possible.

These animals are viviparous; several of them having brought forth eight or ten young ones in the Abbé's hand. They feed on wandering nettles or sea-gellies, and are all proper to be eaten. Being removed into fresh-water, they acquire a pale colour, their external covering becomes flabby, and they very soon die. See ACTINIA.

ANGEL FISH. A beautiful fish in Sir Ashton Lever's Museum, where it was deposited by the late Captain Cook. The body is about fourteen inches long, and ten wide; being wholly of a very dark olive green, except the centre, which is of a deep yellow. The tail, and small fins behind the gills, are of a deep orange red, tipped with yellow; and the large fins, the biggest of which is on the back, are also of a dark olive green.

ANGEL FISH. The usual English name for the *Squatina* of Pliny, called also the monk-fish by some naturalists. This fish, though it seems to connect the genus of rays and sharks, partaking of the character of both, is nevertheless an exception from each in the situation of the mouth, which is placed at the extremity of the head. The head is large, the teeth are broad at their base, but slender and very sharp above, and disposed in five rows round the jaws. By means of muscles uniting them to the jaws, the teeth are capable of being raised and depressed like those of the other shark tribe, not being lodged in sockets as those of cetaceous fish are. The eyes are small; the pupils being of a pale green, the irides white and spotted with brown; and behind each eye is an orifice in the form of a

crescent. The back is of a pale ash-colour, and extremely rough; having a prickly tuberculated line down the middle; the belly is white and smooth; the pectoral fins are large; and extend from the body, in a horizontal position, to a considerable distance, bearing some resemblance to wings. The ventral fins are placed after the same manner; and in these the double penis is situated, which forms a distinguishing character in the males of this genus. The tail is bifurcated, the superior lobe being a little longer than the inferior; and on the back, not very far from the extremity, are two fins.

This fish grows to a great size, sometimes weighing near a hundred pounds; and is frequently caught on the British coasts; where it preys like others of its species. It is extremely voracious, and feeds on flounders and flat-fish, which keep at the bottom of the water. It is exceedingly fierce, and dangerous to approach; and instances have occurred of its tearing fishermen in a terrible manner, when they have chanced to inclose it in their net, and incautiously laid hold of it. It has a peculiar malignity in its aspect; the eyes being oblong, and placed lengthwise in the head, sunk, and overhung by the skin. The ancients made use of the skin of the Angel Fish to polish wood and ivory; and esteemed its flesh the greatest delicacy of all the cartilaginous tribe; as appears from Athenæus: but the moderns disregard it, on account of its coarseness and rankness.

ANGLE SHADES. An English moth, the caterpillar of which feeds on nettles, chickweed, and some other plants; where it may be found full fed about the middle of April, when it appears large and strong, and of a fine transparent green; with an opaque streak down the back. It changes to a chrysalis within a spinning on the surface of the earth; and, in the space of thirty days, the moth appears. The chrysalis is of a fine deep glossy red colour, and is remarkable for having two sharp points at the extremity of its tail. The moth soon lays its eggs, which produce caterpillars that arrive at maturity about the beginning of July, change to chrysalides, and appear in the moth state about the middle of September. This brood soon after deposit their eggs, which remain during the whole winter in a caterpillar state, and are full fed about the end of April.

ANGLER, COMMON. A very singular species of fish, known to the ancients by the name of *batrachos*, and *kana*; and to us by that of the toad-fish, frog-fish, or sea-devil. It resembles a frog in its tadpole state, from which it derives one of its common appellations, and often grows to the length of four or five feet. It is one of the most deformed fish in nature. The head, which is considerably larger than the whole body, is round at the circumference, and flat above; and the mouth is sometimes a yard wide. The under-jaw is considerably longer than the upper; and both are full of slender sharp teeth. In the roof of the mouth are two or three rows of the same; and at the root of the tongue, opposite each other, are two elliptical bones, thick set with very sharp teeth. The nostrils have no external orifice, but there are two large internal ones in the upper part of the mouth, which supply their place. On each side of the upper-jaw are two sharp spines, besides others which are scattered over the upper part of the head. Exactly above the snout, are two long tough filaments; and on the back are three others, to which Pliny gives the name of *cornicula*, and says it makes use of them

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them to attract small fish. With these extended, he informs us, it hides in muddy waters, and leaves nothing but the beads to be seen; the curiosity of the smaller fish brings them to view these filaments, and their hunger inducing them to seize the bait, the animal in ambush suddenly draws in it's filaments with the little fish which had taken the bait, and instantly devours them. This story, though improbable enough, has gained credit among some of our most distinguished naturalists, though a strong presumption to the contrary may fairly be inferred, from the consideration that there is one species of this fish destitute of these filaments, which it certainly would not want were they necessary to the existence of the kind. Along the edges of the head and body are a great number of short fringed skinny substances, placed at equal distances. The ventral fins are broad, thick, and fleshy, jointed like arms, and in the inside divided into fingers. The aperture to the gills is situated behind, and is very large; the back fin is placed very low, near the beginning of the tail; and the anal fin is beneath, nearly opposite the former. The body becomes extremely slender near the tail, the end of which is quite even. The upper part of the Common Angler is of a dusky colour, the lower part is white, and the skin is smooth throughout.

Rondolelius informs us, that if we take out the bowels of this fish, the body will exhibit a transparent appearance; and that, if a lighted candle be placed within the body, as in a lantern, the whole will have a very luminous and formidable aspect. The fishermen, in general, entertain a very great veneration for this ugly fish, supposing it to be an enemy to the dog-fish, the body of that fierce and voracious animal being frequently found in it's stomach; for which reason, whenever they happen to catch the Common Angler, they compliment it with it's liberty.

ANGLER, LONG. A species of fish very little known by naturalists, otherwise than by description. Dr. Borlase says, that it is much longer than the common kind; that the head is more bony, rough, and aculeated; that it has no fin-like appendages round it's head, but that on each side of the thinner part of the body there is a series of them three quarters of an inch in length, beginning beneath the dorsal fin, and reaching within two inches of the tail; and that, at the extremity of the pectoral fins, there are spines nearly two inches long, and others of three quarters of an inch at the end of the tail.

ANGUILLA. A name given by some naturalists to the fish more usually called the hospetus or atherina, commonly caught on the shores of the Mediterranean, and esteemed very delicate food.

ANGUILLA. See EEL.

ANGUILLIFORM. A term applied to express a very large class of fishes, which are soft and lubricous like the eel, and destitute of scales. This term is derived from the Latin words Anguilla, an Eel; and Forma, Shape or Appearance.

Most fishes comprized in this class are long and slender-bodied like the eel: some have no fins either at the gills or belly, as the murus and lampetra; others have fins at their gills, but none on their bellies, as the sea-snake, eel, conger, ophidion, and ammodytes; and others are furnished with both, as the teniae, mustellae, alaudae, and the like.

The word Anguilliform is also applied to certain land animals, bearing some distant resemblance to eels, though they certainly do not belong

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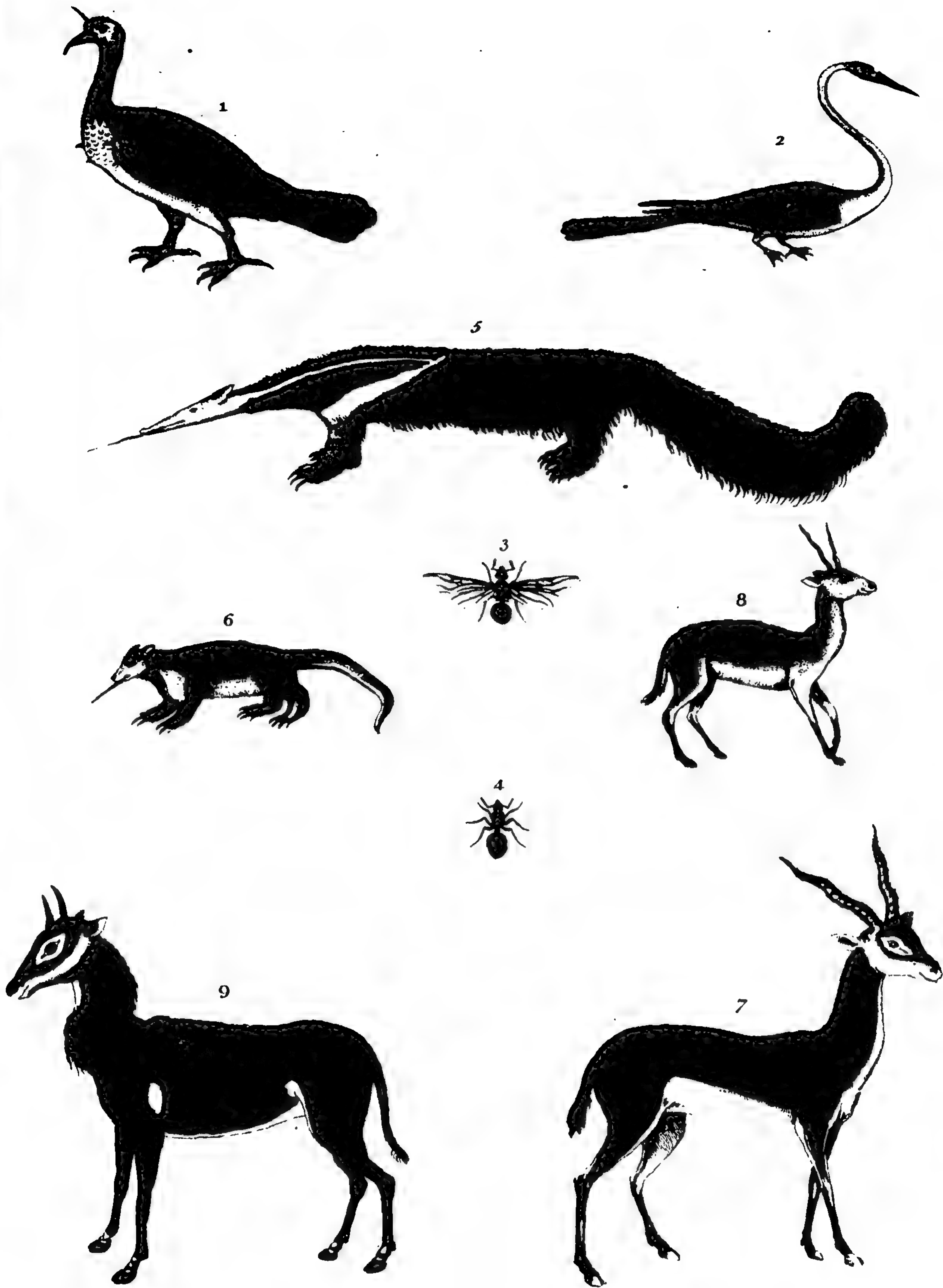
to that class. In this sense we speak of Anguilliform worms, &c.

ANGUIS. A distinct and numerous genus of the order of serpents, and class of amphibious animals, in the Linnæan system; the characteristics of which are, that they have a scaly body of a cylindric figure, and are destitute of feet. See SNAKE.

ANGUIS ESCULAPH. See COLUBER.

ANHIMA. A Brazilian bird, somewhat resembling the crane kind, though not regularly referable to that class. It is a water-fowl of the utmost rapacity, and larger than a swan. The head is small in proportion to the body; and the bill, which is black, not above two inches long. But the most distinguishing peculiarity of this bird, is a long round horn, of an ivory colour, which grows from the fore-part of the head, and is surrounded by a small tuft of black and white feathers. This formidable bird, which seems armed at all points, has also in the front of each wing, at the second joint, two straight triangular spurs about the thickness of a swan's quill; the foremost of these spurs being about an inch long, the hinder one somewhat shorter, and both of a dusky colour. It's claws are long and sharp, and connected by a membrane, as in the cormorant and duck kinds. It's tail is about eight inches long; and it's wings, when folded, reach more than half the length of the tail. The head and neck are of a yellowish colour, and covered with extremely soft feathers; the breast, belly, and thighs, are of a silvery white; and the upper part of the back is brown spotted with yellow, all the rest being black. The Anhima has a loud and terrible cry, sounding something like 'Vyhoo! Vyhoo!' It is never found alone, but always in pairs; the cock and the hen constantly prowling together: and such is said to be the fidelity of these birds, that when the one dies, the other remains by the dead carcase till it expires with hunger. It builds a nest of clay on the ground, near the trunks of trees, in the shape of an oven.

ANHINGA. A very elegant species of the mergi aquatici, or divers, in the Brazils, particularly among the people called Tupinambæ. This fowl is thus described by Willughby. It's body, except the neck, is the size of a common tame duck's; it's bill, which is sharp and slender, is three inches long, the foremost half of the lower and upper parts containing a double row of little hooked teeth inclining backwards; it's head, which somewhat resembles a serpent's, is not two inches long; it's eyes are black, encircled with gold; and it's round slender neck is a foot in length, though the body is only seven inches. The legs are remarkably short, and the thighs are feathered. It hath four toes; three turned forwards, joined together by membranes, after the manner of ducks or cormorants; the fourth shorter, extended sideways below, and joined to the rest by a membrane. The claws are very sharp and crooked. It has a broad tail, ten inches long, consisting of twelve feathers; and the wings terminate about the middle of the tail. The bill is grey, and after it's rise a little yellowish. All the head and neck are covered with very fine feathers, as soft to the touch as velvet; on the upper side a colour from grey inclining to yellow, and those at the throat being entirely grey. The whole breast, lower belly, and upper legs, are covered with soft feathers of a silver colour; and the beginning of the back is clothed with brown ones, each having an oblong spot of whitish yellow in the centre, so that it appears speckled:



1. ANHIMA 2. ANHINGA 3. COMMON ANT 4. NEUTRAL ANT. 5. GREAT ANT-EATER. 6. LESSER ANT EATER
7. COMMON ANTELOPE. 8. ROYAL ANTELOPE 9. WHITE FOOTED ANTELOPE.

led: the rest of the back is black. It has long wings covered with short feathers, spotted at the beginning, like those of the back; which are succeeded by a row of half grey and half black ones; (that is, on one side the shaft grey, on the other black:) the prime feathers being all black. The tail consists of black and shining feathers, tipped with grey. The legs and feet are of a dark yellow inclining to grey. The Anhinga is remarkably cunning in it's method of catching fish; for, after the manner of serpents, first drawing up it's neck, it darts forth it's bill on it's prey, and then seizes it with it's claws. Willughby says he has tasted the Anhinga, and that it's flesh is very little superior to that of the gull.

ANI. The name of a Brazilian bird, somewhat allied to the parroquet kind, and very common in the woods. It is about the size of a thrush, and entirely black.

ANIMAL. A being which, besides a vegetative and generative power, qualities common also to vegetables, is farther endued with sensation, and spontaneous locomotion. Among the infinite variety of productions which the earth offers to our notice, Animals are therefore certainly entitled to the first rank; as well because of the finer formation of their parts, as their superior power. Compared with the vegetable world, which is fixed to one spot, and obliged to wait for it's accidental supplies of nourishment, Animals bear distinguished pre-eminence, and rise to the highest rank in the scale of created things. Far the greater part of Animals are capable of changing their situations, and consequently of seeking that nourishment which is most agreeable to their state; while vegetables are unable to correct the disadvantages of situation, or to shield themselves from the dangers which every object possessed of motion may bring upon them. Those few Animals which are fixed to one spot, even in this seemingly helpless situation, are nevertheless protected from external injury by their shelly covering, which they can close at pleasure, and thus defend themselves from assault. Every Animal, from the highest to the lowest ranks, by some means or other natural to itself, finds security and protection from injury; by force, cunning, swiftness, or courage; but vegetables are totally unprotected, exposed to every assailant, and patiently submissive in every attack. This distinction, indeed, forms the barrier between the Animal and vegetable tribes: an Animal is an organized being, provided in some measure with weapons for it's own security; a vegetable is confined to a single spot, and incapable of self-defence.

But though definitions are scarcely necessary to enable the most ignorant to distinguish a plant from an Animal, they both possess so many corresponding properties, that the two kingdoms, as they are called, seem blended together. Hence it is often difficult to determine where the Animal life commences, and the vegetative terminates. The sensitive-plant, which shrinks from the touch, seems to have as much perception as the fresh-water polypus, which is possessed of a still slower locomotive power. However, the polypus not only hunts for it's food, as most other Animals do, but it changes it's situation, and consequently has the faculty of retreating from danger; while the sensitive-plant can neither quit it's place, nor receive it's nourishment, after the Animal plan.

However, both classes have many resemblances, by which they are raised above the unorganized and inert masses of nature: both are endued with life

and vigour, have their states of improvement and decay, are capable of reproducing their kinds, seem all possessed of sensation in a superior or inferior degree, and have their respective antipathies and inclinations. As all Animals are alternately supported by vegetables, so vegetables are greatly propagated by becoming a part of Animal food. Birds distribute the seeds wherever they fly, and quadrupeds assist to give them greater luxuriance. By these means the quantity of food, in a state of nature, is kept equal to the number of the consumers: and, that even the weakest Animals may find a proportionable supply for their wants, Providence has appropriated different vegetables to different appetites.

Again, if we compare vegetables and Animals, with respect to the places of their growth, we shall find them bearing a still stronger similitude. The vegetables produced in a dry and sunny soil are strong and vigorous, though not luxuriant; so also are the Animals common to such a climate. Those, on the contrary, which are the joint production of warmth and moisture, are luxuriant and tender; and the Animals, assimilating to the food on which they subsist, are much larger in such countries than in others. Thus, in the internal regions of South America and Africa, where the sun usually scorches all above, and inundations cover all below, every Animal, even the insect and the reptile tribes, grows to a prodigious size: the earth-worm of America is often a yard long, and as thick as a common walking-cane; the boiguacu, the largest of the serpent race, sometimes measures forty feet in length; the bats in those climes are as large as rabbits; the roads bigger than ducks; and the spiders equal in size to sparrows. On the contrary, in the frozen regions of the north, where vegetable nature is checked in it's growth, the few Animals which inhabit those regions partake of the diminution; all the wild Animals, the bear excepted, are smaller than in the more genial climes; and such of the domestic as are carried thither, soon degenerate and dwindle away in size. The very insects of the arctic regions are of the minute kinds; the bees and spiders not being more than half as large as those of the torrid zone.

The similitude, however, between vegetables and Animals, is no where more obvious than in those which belong to the ocean, where the nature of the one is admirably adapted to the necessities of the other. The watery element, it is well known, produces it's vegetable stores in great abundance, and is plentifully stocked with insects which subsist upon them. Over extensive tracts of ocean, a weed is seen floating, covering the surface, and exhibiting the appearance of a green and extensive meadow. On the lower side of these fluctuating plants, millions of little Animals are found, which appear excellently calculated for such a mode of existence: for, as the plants on which they subsist lie over their heads, their feet are placed on their backs; and, as land Animals have their legs below their bodies, these have them placed above. At land, also, Animals in general are furnished with eyes to assist them in procuring their food; but, at sea, almost all the reptile kinds are destitute of sight, which might only give them prospects of danger, without assisting them to avoid it.

Thus, throughout every part of creation, there is an obvious affinity between the Animal and the vegetable kingdoms: in general, however, it may be observed, that the more perfect races have the least similitude

similitude to the vegetable productions; while, on the contrary, the meaner the Animal, the more local it is found to be, and the more it is affected by the peculiarities of the soil where it resides. Numbers of the more humble reptile kinds are confined to a single plant; nay, even to a single leaf: on that they subsist, increase with it's vegetation, and seem to decay as it declines. These are the circumscribed inhabitants of a single vegetable: if removed, they instantly die; being entirely assimilated to the plant on which they feed, partaking of it's medicinal qualities, and often assuming it's very colour. Hence an infinite variety of the humbler animated tribes are never seen but in one particular country; they are incapable of existing apart from their kindred vegetables, which are only the produce of certain climates. More perfect Animals, however, lead a life of less dependance; and some of the more generous kinds are found to subsist in various parts of the world at the same time. Yet, of all the tribes of animated nature, man, the noblest Animal, appears least affected by the diversity of soil, and the least influenced by the variations of vegetable subsistence: equally unaffected by the luxuriance of the warmer climates, or the sterility of the frozen, he has spread his habitation over the whole world; and finds the means of subsistence as well amidst the polar regions, as the burning deserts of the equator. Man, therefore, may be called the Animal of every climate, as he is neither circumscribed to zones, nor confined to territories; but exists in every climate, and suffers but very gradual alterations from the nature of his situation.

As to Animals of a meaner rank, whom man compels to attend his peregrinations, these being habituated to live in a kind of constraint, and upon food often different from that of their native soil, soon alter their nature with their nourishment, and assimilate themselves to the vegetables on which they are fed. Thus man, the lord of the creation, himself unaffected in any very perceptible degree, directs the nature of other Animals at pleasure, and trains them to his use or his humour. In those wide uncultivated wildernesses, where man, in his savage state, possesses inferior strength, and the beasts claim divided dominion, the whole forest swarms with noxious Animals and vegetables; Animals in a great measure yet undescribed, and vegetables which want a name.

The aim of man has ever been to subdue the earth to his own use; and where arts and civilization have been introduced, this is in a considerable degree happily effected. In a state of nature, Animal life is increased to the greatest quantity possible; in a state of improvement, it is reduced to more contracted limits: but the greatest possible increase of life would be insufficient, were there not other Animals which subsisted on Animals; and which themselves, in their turn, are food for superior Animals. Were all Animals to subsist on vegetables, thousands of beings must soon become extinct, from a deficiency of provision: but, as Providence has wisely constituted things, one Animal supports another, and thus the infinite variety of existences which people the earth, are all supplied with food suited to their respective natures.

Human industry has been successfully employed to diminish the number of Animals, and increase that of vegetables: and, if we take a comparative view of the different kinds, we shall find that, with respect to man, among the vast variety in the Ani-

mal kingdom, few are beneficial to him; on the contrary, in the vegetable, very few are entirely noxious. For instance, how small a part of the insect tribes are beneficial to man, and what numbers are inimical! In some countries they almost darken the air; a candle cannot be lighted, without their instantly flying round it, and extinguishing the flame; neither the sleeping nor the waking hours of man are unannoyed with these pernicious beings; the most beautiful landscapes in nature only invite their rapacity; and even the coldest recesses are no protection from their assaults. As these minute Animals are injurious from their multitudes, so the larger kinds are equally dreadful to him from their native ferocity. In the most uncultivated regions, these maintain undisputed empire; and man presumes on their territories with dread and apprehension. These Animals are either troublesome or formidable to the human race; but there are still a greater number entirely useless, and which only occupy the room which more beneficial creatures might possess, incommoding mankind rather with their numbers than with their enmities.

Thus, on enumerating the amazing variety of land Animals, which have been estimated at twenty thousand, we can scarcely reckon up a single hundred from which man derives any considerable benefit: the rest are all either his open or his secret enemies; immediately attacking him in person, or intruding on that food he has appropriated to himself. Vegetables, on the contrary, though existing in a greater variety, are but few of them noxious: the most deadly poisons, being properly corrected, are often of the most essential service in medicine; and even those plants which seem only to encumber the ground, serve for food to a race of Animals which mankind either regard with friendship or indifference.

Hence it will appear, that though no original species of Animal or vegetable life is entirely extinct, when man has long exercised dominion, and become undisputed lord, he has exterminated his enemies in every possible degree, and driven them to haunts where he has not yet thought proper to pursue them. Still, however, an immense variety of existences is diffused around us, and it is difficult to determine where we shall begin to consider them! The number of beings endued with animation like ourselves, at first view, indeed, seems infinite. Not only the earth, the water, and the air, teem with Animals of various kinds; but almost every vegetable, every leaf, contains millions of minute inhabitants, each of which fills up the circle of it's allotted life, and some are objects of the greatest curiosity. In contemplating this seeming exuberance of nature, it is not at all wonderful that ignorance should lie down in hopeless uncertainty, and pronounce that absolutely inscrutable which requires much labour to particularize. The active and inquisitive mind, however, by no means intimidated with the immense variety, has invented a method of numbering, grouping, and classing, all the various animals which fall within it's notice: and this system, in many respects, has usurped the place of science; and fancied relations have induced naturalists to blend animals of heterogeneous natures with one another. System, indeed, may be partially useful, to assist the memory, and facilitate the acquirement of natural knowledge; but, when carried to the extent which some of the most eminent naturalists have attempted, it ceases to instruct, and tends

tends only to bewilder and perplex. As some naturalists, however, have certainly attained to a considerable degree of excellence in classing animated nature, it may not be improper just to mention their respective plans, with the chief particulars in which they differ from each other. Leaving, then, the inferior orders of systematic naturalists, whose methods, in general, have only been the amusement of a day, we shall briefly describe the several modes of arrangement adopted by Ray, Klein, Linnæus, and Pennant.

Ray, after Aristotle, divides all Animals into two kinds; those which have blood; and those which have none: placing all the insect tribes in the last class. The first grand order he divides into such as breathe through the lungs, and such as breathe through the gills; which last comprehend the fishes. In those which breathe through the lungs, some have the heart composed of two ventricles, and others only of one. In this last description are included all Animals of the cetaceous kind, all oviparous quadrupeds, and serpents: those Animals which have two ventricles, are some oviparous, as the birds; and some viviparous, as the quadrupeds. The quadrupeds he then divides into such as have hoofs, and such as are claw-footed: the former he again distinguishes into those which have the hoof undivided, those which have it cloven, and those which have it divided into more than two parts. Animals with the cloven hoof he divides into those which chew the cud, as the cow and the sheep; and those which are not ruminant, as the hog. Animals which chew the cud he subdivides into four classes: the first having hollow horns, which they never shed, as the cow; the second including the sheep kind; the third the goat kind; and the last, comprehending such as are furnished with solid horns, and shed them annually, are of the deer kind. Descending to claw-footed Animals, he observes that some have large claws resembling the fingers of the human hand, which he refers to the ape kind; and others have the foot divided in two, with or without a claw to each division, the former being of the camel kind. The elephant makes a genus of itself, its claws being entirely covered with skin. The remainder of the numerous tribe of claw-footed Animals he divides into two kinds; the analogous, or such as bear some resemblance to each other; and the anomalous, which have essential differences. The analogous claw-footed Animals are of two kinds: they are furnished with more than two cutting teeth in each jaw, and are carnivorous; or they have only two cutting teeth in each jaw, and subsist principally on vegetables. The carnivorous kinds are divided into the great and the little. The great carnivorous Animals are subdivided into those which have short snouts, as the cat and the lion; and those which have long and pointed ones, as the dog and the wolf. The little claw-footed carnivorous Animals differ from the great, in having proportionably smaller heads, with slenderer bodies, which qualify them for creeping into holes, in pursuit of their prey, like worms; and these are therefore called the vermin kind.

Klein makes the power of changing situations the general characteristic of Animals, and takes his several distinctions from their aptitude for such a change. Some have a locomotive power by means of feet, or similar appendages; others are furnished both with wings and feet; some can only change their situations in the water by means of fins; others

move on the earth without feet; and some change their situations by moving their shells at pleasure, while others move only periodically. Such as are without locomotive powers are, however, quite unnoticed. The quadrupeds which move chiefly by means of four feet on land, he divides into two orders; the first of which is the hoofed kind, and the second the claw-footed; and each of these orders he subdivides into four families. The first family of the hoofed kind consists of the single hoofed, as the horse and the ass; the second includes those which have the hoof cloven into two parts, as the cow and the sheep; the third, being characterized by a triple division of the hoof, consists only of the rhinoceros; and the fourth, in which the hoof is divided into five parts, is in like manner confined to the elephant. The clawed kind are also divided into families: the first comprehending those which have but two claws on each foot, as the camel; the second including those which have three claws; the third, those with four; and the fourth, such as have five.

Briffon divides animated nature into nine classes: quadrupeds; cetaceous Animals, or those of the whale kind; birds, reptiles, or Animals of the serpent kind; cartilaginous fishes; spinous fishes; testaceous Animals; insects; and worms. He then subdivides the quadrupeds into eighteen orders, and takes his distinctions from the number and conformation of their teeth.

These systems, however, are all in a great measure superseded by that of the celebrated Linnæus; who, with a studied brevity, and unrivalled precision, comprehends the greatest variety in the smallest compass. According to this great naturalist, the first distinction of Animals is to be taken from their internal structures. Some have the heart with two ventricles and hot red blood; viz. quadrupeds and birds; the quadrupeds being viviparous, and the birds oviparous: others have the heart with only one ventricle, and cold red blood; viz. amphibia and fishes; the amphibia being furnished with lungs, and the fishes with gills. Some have the heart with one ventricle, and cold white serum; viz. insects and worms; the insects being furnished with feelers, and the worms with holders. The distinctions of quadrupeds, or Animals with paps, as he terms them, are taken from their teeth. These he divides into seven orders; to which he gives systematic names of his own invention. His primates, or principals, have four cutting teeth in each jaw; the brutæ, or brutes, have no cutting teeth; the feræ, or wild beasts, have generally six cutting teeth in each jaw; the glires, or dormice, have two cutting teeth both above and below; the pecora, or cattle, have many cutting teeth above, and none below; the belluæ, or beasts, have the fore-teeth blunt; and the cetæ, or those of the whale kind, have cartilaginous teeth. This celebrated system is but just sketched out; as the names of the different Animals, and their respective classes, with the most concise descriptions of each, fill two octavo volumes.

The ingenious Pennant, who has, perhaps, given to the world the most accurate system of quadrupeds that ever appeared, divides them into hoofed, digitated, pinnated, and winged quadrupeds. The hoofed quadrupeds he subdivides into such as are whole hoofed, and such as are cloven-hoofed; the digitated, into frugiferous, carnivorous, and insectivorous, regarding at the same time the number of the dentes canini; the pinnated, into pisci-

vorous, and herbivorous; and the winged, which include the bats, insectivorous.

Such are the general outlines of the most famous systems which have been invented to facilitate the study of natural history. Buffon, however, with no less truth than vivacity, has exposed the absurdity of system, when applied to the works of nature; and, by the most beautiful display of one great branch of natural history, has taught us to conceive what pleasure might be expected from the study of the whole, executed on a similar plan of elegance and precision.

In natural history, of all other sciences, there is the least danger of obscurity. In morals or in metaphysics, every definition must be precise, because these sciences are necessarily founded on definitions; but it is far otherwise in subjects where the exhibition of the object itself is capable of correcting any misrepresentation. Thus, by mistake, a creature may be ranked among quadrupeds, which belongs more properly to the fish or insect classes; but this can produce very little confusion, as every reader will be able to form a system consonant to his own judgment, on examining the figure and properties of the Animal.

Animated nature, in general, is divisible into five classes: quadrupeds, birds, fishes, insects, and amphibious Animals; but, though all these seem tolerably distinct from each other in their very natures, there are some instances where we cannot easily decide whether it is a bird or a quadruped, a fish or an insect, which presents itself to our observation. Nature is varied by imperceptible gradations; so that no exact line can be drawn between any two classes of it's productions, nor can any definition be framed to comprehend them all.

Each class of quadrupeds may be arranged under one of the domestic kinds, as a model on which to form an idea of the rest: thus we may say, that a tiger is of the cat kind, and a wolf of the dog kind, because there are some rude resemblances between them; and one who has never seen wild Animals will be able to form at least a slight conception of their figures from his acquaintance with those which are tame. But we dare not assert, with some systematic writers, that a bat is of the human kind, or a hog of the horse kind, merely because there is some trivial similarity in their teeth or paps. All references of this kind, however, are merely arbitrary; and, in many cases, it must be confessed, they are very uncertain. It is difficult to determine, for instance, whether the civet should be classed with the dog or the cat kind; but the exact history of the civet being once known, it is of very little importance to what kind the different conjectures of different persons may judge it bears the greatest resemblance.

Animals consist of solids or firm parts, fluids, and matter of an intermediate nature. The solids are mere earth, connected together by some oily humour, and reducible by fire into their original substance. Thus a bone, being perfectly purged of all it's moisture by calcination, is found to become pure earth, which the least force will crumble into dust; yet the same bone, on being immersed in water, will become firm and solid again after calcination, and considerably more so in oil than in water. Indeed, the cupels or furnaces of chymists made of Animal earth will sustain the utmost effects of fire.

The fluid parts of Animals become more crude in proportion as they are nearer the lacteals and

absorbent vessels. Chyle, for example, is little more than a vegetable juice: but, in it's farther progress, it gradually loses it's vegetable characters; and, after a number of circulations, it becomes a perfect Animal juice, under the denomination of blood, from whence all the humours are derived.

Animal substances have been distinguished from those of vegetables, by two circumstances: first, that the former, when burnt, are found perfectly insipid, all Animal salts being volatile and evaporating with heat; whereas the contrary is experienced in vegetables, which constantly retain some fixed salt in all their ashes: secondly, that no pure acid is contained in any Animal juice; nor can any acid salt be extracted from it, though these qualities are known to exist in all vegetables. Animals, however, may be converted into their vegetable nature by putrefaction.

ANIMALCULE. An animal of such minute proportions, that it is scarcely discernible by the naked eye, though all nature teems with an immense variety of these creatures. Of this humble species are those innumerable hosts of insects which people the water in the summer months, tinging it sometimes with a pale or deep red colour, and sometimes with a yellow one. The Animalcule usually exhibits something of the shrimp appearance, and the most common one is called by Swammerdam, *pulex aquatica arborescens*. Their concourse at this season, Dr. Derham observes, is for the purpose of propagating the species; and he adds, that these little insects afford a comfortable subsistence to many water animals. The green scum on the surface of stagnant waters is often solely composed of myriads of another still smaller order of Animalcules; which may probably, in their turn, be destined to supply the *pulices aquaticæ* with food. The invention of the microscope has brought to light millions of Animalcules in almost every kind of fluid; and, in the Philosophical Transactions, we meet with observations on the Animalcules in rain-water, in several chalybeate waters, and in infusions of pepper, bay-berries, barley, oats, wheat, &c. Those, indeed, who have made the most minute researches into the natures of the several objects subjected to their senses, have discovered that the substances on which they employed their curiosity were often totally different from what they were originally apprehended. From such investigations it appears that the whole earth is replete with an infinity of Animalcules floating in the air we breathe, disporting in the liquors we drink, and adhering to every object of the sight or touch. The conjectures and hypotheses relative to the production, generation, structure, and use, of these Animalcules, invented by caprice, and adopted by credulity, have been more various and contradictory than it is easy to conceive. Avoiding, therefore, these inexplicable labyrinths, we shall confine our observations to actual discoveries. By the assistance of the microscope, we not only perceive that such Animalcules really exist, but are enabled, in some degree, to determine their shapes, and the various peculiarities of their motions. Indeed, the contemplation of known Animalcules has rendered the idea of infinitely small bodies extremely familiar to all mankind. A mite was formerly thought the utmost limit of animated minuteness; but our credulity is not, at present, greatly alarmed, when we are told of animals even twenty-seven millions of times smaller than a mite. Minute animals appear to be proportionably stronger, more active, and

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and vivacious, than larger ones. How infinitely does the leap of a flea exceed any thing of which greater animals are capable? How amazingly faster than the best race-horse does a mite run, in proportion to their respective sizes? M. De Lisle has given the computation of the velocity of a small creature, scarcely discernible by the naked eye, which he found to run three inches in half a second: now, supposing it's feet to be the fifteenth part of a line, it must make five hundred steps in travelling three inches; that is, it must shift it's legs five hundred times in a single second, or the ordinary pulsation of an artery.

Sir John Hill has arranged Animalcules under three classes; namely, those which have no tails, nor any visible limbs; those which have tails, but no visible limbs; and those which have visible limbs: each of which classes he subdivides into several distinct genera.

Animalcules, however, may be more properly reduced to visible, invisible, and microscopical. Visible Animalcules are such as are perceptible by the naked eye; of which kind we may enumerate mites, with several species of insects, reptiles, and other vermin. Invisible Animalcules are a race of beings neither perceptible by the natural eye, nor even by the best microscopes; concerning which naturalists, of course, form many strange conjectures. Reason and analogy, indeed, give some support to our idea of the existence of an infinitude of imperceptible Animalcules. The naked eye is adapted to the inspection of all animals not less than the mite; there a new order of beings commences, reserved for the microscope, and comprehending all descriptions of creatures, from the mite to such as are twenty-seven millions of times smaller: nor can this last order be considered as completely limited, till we suppose the microscope arrived at the highest degree of perfection.

Microscopical Animalcules are such as are only perceptible by the assistance of a large magnifier; and these, according to some naturalists, fall most properly under the last class of invisibles. The excessive minuteness of these Animalcules conceals them from the naked eye; and one of the most considerable improvements in modern philosophy is the invention of those instruments which bring such creatures under our cognizance and inspection. An object a thousand times too minute to affect the optic sense, might have seemed wholly excluded from our observation; but human sagacity has contrived means to extend the faculty of sight inconceivably farther. Indeed, most of our microscopic Animalcules are so extremely minute, that, through a lens, the focal distance of which is the tenth part of an inch, they seem only like so many points: that is, their figures cannot be distinguished; so that they appear, from the vertex of that lens, under an angle not exceeding a minute. If we farther investigate the real magnitude of such an object, it will be found nearly equal to $\frac{1}{1000}$ of an inch in length. Supposing, therefore, these Animalcules of a cubic figure, (that is, of the same length, breadth, and thickness) their magnitude will be expressed by the cube of the fraction $\frac{1}{1000}$; that is, by the number $\frac{1}{1000000}$; and so many parts of a square inch does each Animalcule in that case equal.

Strange as it may seem, it is undoubtedly true, that many thousands of these Animalcules would have sufficient room to dance on the point of a common needle: and, indeed, some liquids abound

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with such amazingly minute Animalcules, that the magnitude of the whole earth is not large enough to be a third proportional to these diminutive floating animals, compared with a single whale.

Animalcules are found of various kinds; some formed like fish, others like reptiles, some hexapedal, and others horned. In several kinds, however minute, it is easy to discover the form of their mouths, their proboscides, and horns, with the motions of their hearts, lungs, and other parts. Every Animalcule being an organized body, how delicate and subtle must be the several parts which constitute such a creature, and preserve it's vital functions! It is difficult to conceive how, in so narrow a compass, there can possibly be contained a heart, the fountain of life; muscles necessary to the creature's motions; glands for the secretion of it's fluids; a stomach and bowels to digest it's food; and other innumerable members, without which the minutest Animalcule could by no means subsist. As every one of these members, however, is also an organical body, they must necessarily be composed of parts, adapted to their respective actions. They consist of fibres, membranes, veins, arteries, nerves, and coats, with an almost infinite number of fine small tubes, the minuteness of which exceeds every effort of human imagination. But there are still other parts which must of necessity be even less than these: and such are the several fluids permeating those fine tubes, as the blood, lymph, and animal spirits; the subtlety of which, even in large animals, is almost beyond conception. Lewenhoeck calculates, that a thousand millions of those Animalcules which are discovered in common water, do not collectively exceed the dimensions of a single grain of sand! This author, likewise, on examining the male sperm of various animals, discovered in many an infinitude of Animalcules, not larger than those just mentioned. In the milt of a single cod-fish there are more Animalcules than men on the whole earth. The foul whitish matter which sticks to the human teeth abounds with Animalcules of various figures, to which vinegar is fatal; and yet vinegar itself supports a species of Animalcules which are shaped like eels. In short, if we give full credit to this penetrating naturalist, every corruptible substance produces it's various Animalcules; and to these must we ascribe the original cause of many diseases. The itch, it is well known, from repeated experiments, is a disorder arising from the irritation of a species of Animalcules found in the pustules of that malady; whence the communication of it by contact is easily conceived, as well as the reason why a cure is effected by means of cutaneous applications. To the same radical cause, some have also attributed the small-pox, the measles, and other contagious diseases. Some, indeed, go farther, and pretend to reduce all diseases in general to this principle: and a late writer, in particular, has ventured not only to account for all diseases, but even for the operations of all medicines, from the hypothesis of Animalcules. Thus the most beneficial or curious discoveries in natural philosophy have laid the foundation for visionary theories, and have been introduced to support the most chimerical systems.

ANIMAL FLOWER. A name given by most naturalists to an Animal bearing some distant resemblance to the Flower of the marigold, but of a paler yellow. This name, however, seems well adapted to the Animal; for it's claws, or tentacula, being

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being disposed in regular circles, and tinged with a beautiful variety of bright lively colours, very nearly represent the petals of some of the most elegantly fringed and radiated Flowers; such as the carnation, marigold, and anemone.

ANIMALS, AMPHIBIOUS. A term generally applied to signify such animals as are capable of living either on land or in the water; or, as some define it, those animals which breathe the air, but pass part of their time in the water, as affording them their chief food. The word Amphibious is derived from the Greek *Amphi*, Both; and *Bios*, Life; from their being qualified to exist both on the earth and in the water. Such are the frog, castor, otter, tortoise, sea-calf, alligator, &c. Most of the Amphibious kind, the castor and otter excepted, have peculiarities in their structure to fit them for situations so importantly different; particularly, in the heart, lungs, foramen ovale, &c. In some of these animals, (the frog and tortoise, for example) the heart has but one cavity, with an artery to receive the blood coming out of it, and a vein to convey it thither. In others, the foramen ovale appears to be still open for the passage of the blood from the vena cava to the arteria venosa, without the help of breathing. In the castor dissected by the academists of Paris, though the foramen was not found actually open, the marks of it appeared; and the cause of it's being closed up might well enough be accounted for, from the animal's having been long kept out of the water. In the otter the case is different; there being no appearance of any thing like a foramen, so that the creature is under a necessity of occasionally rising above water to take in air.

The structure of the feet of the castor at once pronounces it Amphibious; the fore-feet being formed like those of such terrestrial animals as hold their food in their feet; while the hind-feet are fashioned after the manner of river-fowls, with webs or membranes between the toes.

Many of the fly kinds may be said, in one sense, to be Amphibious. Gnats drop their eggs in water; where their young are hatched, and live and breathe after the manner of fishes: till, at length, undergoing a metamorphosis, they take wing, quit their native element, and become inhabitants of the air. Even swallows are by some writers ranged under this class, from the idea that they have been known to pass the winter asleep under water, whence the warmth of the spring has awakened and called them forth.

The term Amphibious is sometimes also extended to men who have the faculty of living a long time under water. We have many instances of such Amphibious men; the most remarkable is that of a Sicilian, named the Fish Colas; whom, Kircher relates, by long habitude from his youth, had so accustomed himself to live in water, that his nature seemed to be quite altered, and he lived rather after the manner of a fish than of a man.

Buffon, however, has considerably, and perhaps justly, narrowed the class of Amphibious animals. The sole animals, says this great naturalist, to which we can apply this name, in all the rigour of it's acceptation, are the seal; the morse, or sea-calf; and the manati, or marine ox: because these are the only ones in which the foramen ovale in the heart remains always open, and consequently the only ones which can live without respiration as well in the air as in the water.

Dr. Hunter observes that, properly speaking,

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there are no Amphibious animals; for that fish cannot live long without air, though much longer than men.

Elias Geissler has written expressly on Amphibious animals; and Mr. Ottwald, of Dantzick, has left behind him anatomical observations on the same subject.

ANOCYSTI. The name of a class of the *echini marini*, which have the aperture of the anus at the apex of the shell. Some of these approach to a hemispheric, or spheroidal figure; while others are more flat, and bear no inconsiderable resemblance to a shield.

ANOLE. A species of lizard common in the West Indies, where it infests the houses and plantations. It is about the size of the common European lizard, but it's head is longer. It's skin is of a yellowish hue; and it's back is variegated with green, blue and grey lines, running from the head to the tail. It takes shelter in a hole during the night, where it makes a continued and disgusting noise; but in the day-time it crawls abroad, and is constantly in motion.

ANOMIA. A family of shells whose characteristic is, that they are bivalve, and unequivalve; having one valve perforated near the hinge, by which perforation they are affixed to some other body.

This family has long been known in a fossil state, and contains a great number of species; but few of them have been particularly described by naturalists, the rest being yet undiscovered recent from the sea.

Columna first remarked some fossil species; and, not finding these species mentioned by conchologists as shells, gave them the appellation of *conchæ rariores Anomia*; which term *Anomia* is now become the standard name of the family. Several succeeding naturalists considered them merely as fossils; and it is only within the last thirty years that any recent kinds have been discovered.

Gualtieri, indeed, gives the figures of three recent kinds, and has made a particular genus of them, which he calls *terebratula*. However, he defines them very erroneously, as shells with equal valves, and dissimilar sides, of a peculiar construction, instead of a beak having a perforation, and also a singular articulation or connection internally. The celebrated Linnæus, in his genus of *Anomia*, has mixed the recent with the fossil kinds; describing them as shells with unequal valves, one valve being flattish, and the other convex; the beak perforated, and the hinge inarticulate or toothless.

A few recent species only being yet discovered, it is impossible to be very accurate in the description of them. It is, however, pretty evident, that the valves of the *Anomia* are connected together in two different ways; and that, instead of saying they are simply inarticulate, they may more properly be described as being some joined by an inarticulate hinge, and others by a multarticulate one. The first set have no teeth or joints on the hinge; but the upper valve is always indented into a wide opening of the larger or under valve, in which it plays like a joint when the exigences of the animal require it to be opened or shut; and the second set have a visible and regular multarticulate hinge, resembling the multarticulate cockle.

From a consideration of the depth of the grooves, the indentings, and undulated margins, of these shells, and of their beaks, which are perforated or tubular

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tubular quite within the shell, it appears highly probable that these animals receive their nourishment through their tubes or perforated beaks only, and that they seldom or never have occasion to open their valves. Indeed, the situations in which they are found, and particularly their internal structures, seem to indicate that the shells are not adapted for frequent opening.

This curious family of shells may be divided into two genera; the inarticulate, and the multarticulate. In the inarticulate *Anomia*, the hinge of the under valve forms a large cavity, the corners of which make two prominences or joints; and the upper valve is indented into it by a prominency corresponding with the cavity, and by two small depressions answering to the two prominences or joints. In the multarticulate *Anomia* the hinge lies in a long straight line, and is set with many teeth.

The *Anomia* has the habit of an oyster, to which it is often found affixed by a strong tendinous ligature. The larger species yet discovered measures about two inches diameter; the smaller is about the size of a cockle.

The fossil species of *Anomia* are uncommonly numerous in Great Britain; where they are found in chalk-pits, and in lime-stone and other quarries.

ANSERES. One of the six orders of birds in the Linnæan system; the characteristic distinctions of which are, a smooth beak, covered with skin, gibbous at the base, and enlarged towards the apex; the jaw denticulated, and the tongue fleshy; the feet adapted to swimming, having thin toes connected by a membrane; the legs thick and short; and the body bulky and plump, covered with a thin skin, and feathers. This order of birds is analogous to the *belluæ* in the class of *mammalia*.

ANT. A genus of insects belonging to the Linnæan order of hymenoptera; distinguished from the other genera of this order by having an erect squama, or scaly body, placed between the thorax and the abdomen.

These insects have been famous from all antiquity for their social and industrious habits; for their spirit of subordination; and for being offered as a pattern of parsimony to the profuse, and of unremitting diligence to the sluggard. More recent experiments, however, and more accurate observations, convince us that much of their boasted frugality and precaution is fictitious. The treasures they lay up are no longer supposed to be intended for future provision; and the choice they make in their stores appears not to be dictated by any very extraordinary sagacity. It is, indeed, somewhat surprizing, that every writer of antiquity, every poet, and every moralist, should describe this insect as labouring only in the summer, and feasting on the produce of its toils during the winter. Perhaps, in some of the gentler climates, where the winter is mild, and of short continuance, this may be the case; but in France, England, and other northern countries, these animals can have no occasion for a supply of winter provisions; being actually, during that season, in a state of absolute torpidity.

The common European Ants are, in general, either red or black, and they are of various magnitudes. Some of them are furnished with stings, and others are wholly destitute of them: such as have stings use them for their defence; and such as are unprovided with these weapons have a

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power of spurting from their posteriors an acid pungent fluid, which inflames and irritates the skin like nettles. The body of the common Ant consists of three divisions; the head, breast, and belly. In the head are placed the eyes, which are extremely black; and under the eyes are two small horns or feelers, composed of twelve joints, all covered with a fine silky hair. The mouth is composed of two crooked jaws, which project outwards; in each of which appear incisures resembling teeth. The breast is covered with a fine silky hair, from which project six legs, pretty strong, and resembling hair, having the extremities of each armed with two small claws, which assist the animal in climbing. The belly is redder than the rest of the body, which is rather of a brown chesnut colour, shining like glass, and covered with extremely fine hair. From this formation, the Ant seems bolder, and more active, than any other creature of the insect tribe of the same size; and, indeed, it possesses sufficient intrepidity to attack an animal often more than ten times its own magnitude.

No sooner is the winter past, than the Ant-hill, which before seemed a desert, again swarms with renovated life; and myriads of these insects are seen just awakened from their annual lethargy, and preparing for the enjoyments and the toils of summer. During the first day of their appearance, they never offer to quit the hill, which may be considered as their citadel, but run over every part of it, as if to examine its present situation, and observe what injury it has sustained from the inclemency of the weather while they were asleep.

At their first appearance none but the wingless tribes are to be seen, those furnished with wings still remaining at the bottom of the hill. The working or neutral Ants, which first appear, are always destitute of wings; while the male and female Ants, which are each furnished with four large wings, are more dilatory in rising from their dormant state. Thus, like bees, which they extremely resemble in their œconomy, the Ants are divided into male, female, and the neutral or working tribes. These are all easily distinguished from one another; the females being considerably larger than the males, and the labouring Ants still smaller than either. The two former generally have wings, but the latter never have any; and these last perform all the labours which contribute to the welfare and preservation of the commonwealth. The female may also be distinguished by the structure and colour of her breast, which is a little browner than that of the neutral Ant, and brighter than that of the male. In eight or ten days after their first appearance, the labours of the hill begin to be in some forwardness: the males and females appear mixed with the drudging multitude, and are active in traversing their boundaries, and sportively pursuing each other. They seem in no respect to partake of the toils of the state, but are rather employed in amorous dalliance; the males pursuing the females with great alacrity, and apparently forcing their compliance. In the act of coition they remain united for some time, during which the males suffer themselves to be drawn about at the pleasure of the females. In the mean time, the working body of the state have no participation in these enjoyments, nor concern themselves with the amorous tribes: they are employed in diligently making excursions from the hill in pursuit of food for themselves and their associates; and in providing

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providing proper materials to afford a comfortable retreat for the young, and add to the security of the whole commonwealth.

In England, Ant-hills appear formed and arranged with very little regard to order or regularity; but, in the more southern provinces of Europe, they are constructed with amazing ingenuity, and seem replete with contrivance and sagacity. They are generally formed in the vicinity of some large tree, on the banks of a pleasant stream; the former for the purpose of securing food, and the latter for supplying them with that abundant moisture which is requisite for the use of these animals. The shape of the Ant-hill is that of a sugar-loaf; being about three feet high, and composed of leaves, bits of wood, sand, earth, gum, and grains of corn. These are all united into a compact body, perforated with galleries down to the bottom, and having a variety of meandering ways in different parts of the structure. From this habitation to the water, as well as to the tree, there are many paths worn by constant assiduity, along which the sedulous insects are seen continually passing and repassing; so that, from the commencement of the warm season, they are constantly employed till the unpropitious weather again suspends their exertions, and terminates their annual industry.

The working Ants are not only employed in sustaining the idlers at home, but in providing sufficient food for themselves. They subsist on various provisions, both of the animal and vegetable kinds; killing and devouring all such insects as are of inferior strength, and seeming remarkably fond of ripe fruits, and every species of sweet. Having met with any fruit, or other large substance, they devour what they can; and, tearing the rest in pieces, load themselves with the spoil. When they meet with an insect which they are singly incapable of mastering, several of them attack it at once; and, lacerating its members, each Ant loads itself with a part of the booty: and where they happen, in their excursions, to encounter any thing too weighty for one to support, and which they cannot easily divide, several of them assist in forcing it along; some dragging, and others shoving. When a single Ant chances to make a fortunate discovery, it immediately communicates the information to others, and the whole republic soon appear in motion. But while they are thus busied in feeding abroad, and carrying in provisions for the use of those which continue inactive at home, they are by no means unmindful of posterity. The female Ants soon begin to lay their eggs, which are immediately carried to the safest situation, at the bottom of the hill, where they are assiduously defended from every violence by the labouring tribe. Those white substances, however, which are found so plentifully in every Ant-hill, are not the newly-deposited eggs of the Ant, as many have erroneously supposed; on the contrary, the real egg of this animal is so very minute, that it is hardly discernible when even laid on a black ground. In fact, those little white bodies vulgarly called Ant-eggs are the young animals in their maggot state, when endued with life, and long since liberated; being often involved in cones which they have spun round themselves like silk-worms. The real egg, when laid, being viewed through a microscope, appears smooth, polished, and shining; while the maggot is composed of twelve rings, and is in general very considerably larger than the full-grown Ant itself.

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It is impossible to express the fond attachment which the labouring Ants shew to the rising progeny. In cold weather they bear them in their mouths to the very depths of their retreat, that they may be less liable to the severity of the season; and, when it happens to be a fine day, they remove them with the same tenderness nearer the surface, that the warm beams of the sun may contribute to accelerate their maturity. If a formidable enemy demolishes their whole habitation, crushing them by thousands in the ruin, these wonderful insects, affectionately mindful of parental duties, make it their first care to save their offspring; and, on such occasions, they may be observed running wildly about, in a state of distraction, each loaded with a young one, not unfrequently as large as itself.

Swammerdam informs us, that he kept several working Ants in his closet, together with their young, in a glass filled with earth; and that he took pleasure in observing how they dug deeper and deeper, to deposit their eggs, as the earth dried on the surface; but, on pouring water over the mould, it was equally curious to see with what care, affection, and diligence, they laboured to place their brood in safety, by carrying them to the driest parts. The same author adds, that when water had been wanting for several days, and the earth was afterwards a little moistened, they would immediately carry their young to have a share, who seemed to suck up the moisture with pleasure and avidity.

When the young maggot has attained to its full proportions, the breast insensibly swells, it casts its skin, and loses all motion; the several members which were before hidden then begin to make their appearance, and an aurelia is formed, which exhibits very distinctly all the parts of the animal, though they are yet destitute of motion, and wrapped up, as it were, in a slight covering. Having passed through all its metamorphoses, and arrived at its proper maturity, it bursts through the surrounding folds, to assume the form it is in future to retain. This, however, is not solely effected by the efforts of the rising animal, the old ones very assiduously tearing with their teeth the covering which enwraps it; without which assistance, the aurelia would be unable to emancipate itself, as an ingenious naturalist has proved by repeated experiments. The old ones not only lend them their aid on this occasion, but actually know the precise time when their assistance is proper to be applied: and this, indeed, is the more necessary, as the young animal, if produced too soon, would infallibly perish on being exposed to the cool air; and, if too long detained in prison, would as certainly be suffocated.

The female having laid all her eggs, and the whole brood being thus produced, her labours, as well as those of the male, now cease; and her wings, which but a short time before were so actively employed, begin to disappear. What becomes of her when thus divested of one of her distinguishing ornaments, is not perfectly known; though she is usually seen in the cells for some weeks afterwards. The males, however, having no longer any employment at home, make use of their wings to fly away, and never more return. It is probable that, having performed their destined office, they perish with cold, or are devoured by the birds; many of which are extremely fond of this species of food. The labourers, in the mean time, having probably deposited

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deposed their queen, and being deserted by the males, which served only to clog the community, prepare for the severity of winter, by sinking their retreats as deep in the earth as possible; and it is now found that the grains of corn, and other substances, with which they furnish their hill, are meant only as fences to repel the severity of the winter, and not as provisions to support them during its continuance. It is a general observation, that almost every insect which lives a year after arriving at its full growth, is obliged to pass four or five months without receiving any aliment, during which period it remains in a dormant state. This being certainly the case with regard to the European Ants, it would be absolutely useless for them to make provision against a season which they cannot enjoy: and, indeed, so far are they from feeding in winter on the fruits of their summer labours, that they are totally incapable of stirring during all the former season. Thus, what some authors have called a magazine of provisions, appears to be no more than a bulwark, which serves as a common retreat when the inclemency of the weather confines them to their lethargic state.

However, what has been said, with so much exaggeration, of the European Ants, is perhaps strictly true of those in the tropical regions: where they construct hills with amazing contrivance and regularity; laying up their provisions with much wisdom and foresight; and, probably remaining active the whole year, have œconomical regulations among themselves entirely unknown in European climates.

Reaumur, Gould, and Carre, who have made the most minute enquiries into the œconomy of Ants, in general agree with the relation we have given of these wonderful insects.

Mr. Gould observes, that every different colony of Ants is composed of insects of one particular species, over which a large female, to which he gives the title of queen, presides. The queen, he endeavours to prove, is the mother of the whole brood; and is distinguished from the rest by her superior magnitude, by the diversity of her colour, and by that reverential awe with which she is constantly treated by all her subjects. The colour of the queen sometimes differs in different colonies. Her head resembles that of the common Ant: she has likewise three lucid specks on her forehead, placed in a triangular form, which seem to be the eyes, and are of the same structure with those of the spider. The queen, as soon as she has laid a sufficient quantity of eggs, leaves them to the care of her labouring subjects, and withdraws to a separate apartment. Two or three yellow queens have sometimes been found in the same colony; and, of the red, there are seldom less than two regents. In this respect they both differ from the hill and small black Ants, which have only one.

From the most satisfactory experiments, this ingenious enquirer into nature has evinced, that the queen alone supplies every particular colony with its inhabitants; and that she lays three different sorts of eggs, viz. the male, the female, and the neutral. These Ant-vernicles are very slow in their growth, and undergo various metamorphoses before they arrive at a state of full maturity.

Mr. Carre concurs with Mr. Gould in his general theory of Ants; and informs us, that these surprising insects swarm once a year; and that the young can build their habitations without the assistance of the old. At first, they seem solely attentive to

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the construction of them; but no sooner are they finished, than some of the Ants proceed in search of provisions, which they lay up for their daily consumption, and for the support of the inactive part of their species, without any apparent foresight of an approaching inclement season.

After all, no insect can be more laborious than the Ant, nor more persevering; hence the very stones over which they pass and repass will often be visibly worn into tracks. They are so extremely fond of flesh, that they will not only feed on the bodies of may-bugs and beetles; but if a frog, lizard, bird, or serpent, be thrown in their way, they in a few days reduce it to a skeleton.

Ants have many enemies among the feathered tribes, particularly wood-peckers: but the Antlion is, of all others, the most formidable destroyer of these sedulous insects. The Ants found in the gardens and orchards appear to be a different species from those which inhabit the fields and woods, and are peculiarly inimical to the labours of the gardener. Several methods have been invented for their destruction: such as tallow, ashes, unslaked lime, soot, oil of aspic, ox's gall, saw-dust, pounded hogs dung, and sulphur; the fumes of which last article have been particularly recommended for their extirpation. The Ants, however, are not so prejudicial to hortulane productions as has generally been imagined; and therefore often suffer for the depredations of other insects.

Bontius informs us that, in the East Indies, Ants of a reddish hue are seen flying, which collect from flowers, trees, shrubs, and herbs, a substance of which gum-lac is ultimately composed. Subsequent authors, however, are not unanimous in supporting this assertion. Geoffery observes, that the name Gum is improperly applied to this substance, it being rather of a cereous nature. The most remarkable of this sort is stick-lac, brought over on the very branches whereon it is found, and which some have supposed to proceed from the trees themselves: but this conjecture is evidently erroneous; for on making an incision in the tree, nothing of that kind would flow from it. It is therefore most probably a kind of comb, partaking of the nature of that formed by the bees and other labouring insects; for, on its parts being separated, different cells appear of a pretty uniform figure; and hence it is evident that the lac is nothing but a kind of wax which forms the component parts of the comb.

Aldrovandus reports, that in Brazil there are large winged Ants, which have both a very agreeable taste and smell; and their numbers are so immense, that they sometimes appear like a cloud. The German Ephemerides informs us that, on July 18, 1679, when the weather was intensely hot, but thick and cloudy, a flight of winged Ants was observed to proceed from the north-east towards the south-west; that the town of Posen, on the Danube, was filled with them; that such a vast number alighted in the marketplace, that no one could stir without killing immense numbers of them; that their flight did not continue more than a quarter of an hour; and that, on falling, they lost their wings, and only crept about slowly: and that they resembled the common Ants, though of superior magnitude, and furnished with two transparent wings.

In Africa, and particularly in Guinea, the Ants, which are of three kinds, the red, the green, and the black, are very formidable and mischievous; and their sting produces extreme pain. They raise their

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their hills, which are formed of a viscid kind of clay, to an amazing height, sometimes from six to twelve feet, tapering into a pyramidal form: the habitations are constructed with great art; and the cells are so numerous and regular, that more ingenuity and industry is scarcely perceptible in the formation of a honeycomb. These insects appear to be subject to the strictest regulations: for, on the slightest warning, they fall forth upon whatever object disturbs them; and, if they can find means to arrest their enemy, he is sure to experience no lenity. Sheep, fowls, and rats, are often destroyed by these insects, and their flesh stript off to the very bones.

Brazil contains a variety of Ants, some of which are nearly as destructive as the termites of Africa. Their colours are various, and beautiful; and several species are furnished with wings. In the oriental regions, likewise, the numbers of Ants are prodigious; some being remarkably large, and of a ruddy colour inclining to sable: they are extremely destructive to the fruits of the earth, as well as to domestic articles.

ANT HORSE. The largest species of Ant found in Great Britain, being twice the magnitude of the common sort. It is not only distinguished by it's size, but by the blackness of it's head, and the dusky iron-grey colour of it's breast. It's legs are likewise an iron-grey; and the scale between the body and the breast is of an oval figure, pointed at the top, and undivided. The body is entirely brown, and composed of five segments. This species generally harbours in hollow trees, but in it's ordinary habits differs very little from the rest of the genus.

ANT, RED. This insect, which is of inferior size to the common Ant, has a very small head, and a broad breast in proportion to it's body. The scale is slightly dentated, and nearly circular; the legs are slender; the wings extremely fine, and of a brownish hue. It frequents dry pastures, and is often found on the leaves and stalks of the humbler plants.

ANT, BLACK. The black Ant is of a middle size between the horse and the red species. It's head is large in proportion to it's body, and it's breast somewhat depressed. The scale is of an oval shape, having it's edges entire; and the legs are longer and more slender than in the other species. This Ant abounds in heaths and large dry plains.

ANT, AMERICAN. The common Ants of America are very large and voracious. They are furnished with two crooked teeth, which meet each other like nippers, and with which they cut the leaves of trees and other substances on which they subsist. A colony of these creatures sometimes strip a stately tree of it's foliage in a single night, carrying away great part of the leaves to feed their young. When they arrive at full maturity, they shed their external coats, like flies on quitting their caterpillar state, and then become winged insects, under which form they deposit their eggs; excavating their retreats in the earth to a great depth, and constructing their nests with wonderful ingenuity. They carry on continual hostilities with every other species of insects; and when they rove abroad in bodies, which is always once a year, they penetrate every corner of the houses in their vicinity, and destroy whatever insects they contain.

ANT, AMERICAN VELVET. A very elegant insect about the size of the hornet, the body being beautifully marked with black and crimson spots of a vel-

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vet gloss. The breast is extremely strong and hard, and will bear a considerable pressure without material injury. The sting of this species inflicts a wound which occasions extreme pain and inflammation.

ANT-EATER, or ANT-BEAR. A genus of animals of which there are several species: the distinguishing characteristics are, that the body is covered with hair, the mouth small, and the tongue, which is long and cylindric, calculated to supply the want of teeth.

Among the many animals which prey on ants, none are so destructive to that indefatigable race as those which go under the appellation of Ant-Bears or Ant-Eaters; and which, though considerably different in size and figure, agree in the peculiar length and slenderness of their snouts, their singular appetites, and the manner of seizing their prey.

These have been classed by Buffon into the larger tamandua, the smaller tamandua, and the Ant-Eater; we shall, however, follow the more accurate divisions of Pennant, who distinguishes this genus of animals into the Great, the Middle, the Striped, and the Lesser Ant-Eater.

In reviewing the history of this genus of animals, it is observable, that the snout is so disproportionate to the rest of the creature, that it's length makes near a fourth part of the whole. Though the horse has as large a head as almost any other European animal, the Ant-Eater has one twice as long in proportion to it's magnitude. The snout of this animal is almost round and cylindrical, extremely slender, and scarcely thicker near the eyes than at it's extremity. The mouth is very small; the nostrils are close set; the eyes are little; and the neck is short. The tongue, which is long and slender, is generally doubled up in the mouth, and is the only instrument by means of which the animal finds a subsistence; as the whole of this tribe are entirely destitute of teeth, and derive their safety principally from the remoteness of their retreats. Indeed, if we carefully survey the various parts of the earth, we shall find that the most active, and most sprightly, as well as the most beneficial quadrupeds, have been placed contiguous to man, and have been either made subservient to his pleasures, or have maintained their independence by their vigilance, their cunning, or their strength; and it is only in the remotest solitudes that we are to look for the helpless, the deformed, and the monstrous births of nature. These wretched animals, being incapable of defending themselves either by their strength or cunning, easily become a prey to others which possess superior agility or fortitude; and, therefore, they retire for safety into the darkest forests, or the most deserted mountains. From this observation, it may naturally be supposed that the Ant-Eater, a creature so helpless and destitute that it's legs are too short to accelerate it's flight, and which possesses no natural arms for defence, is neither very numerous, nor often seen. It is principally found in the new world, though it is also sometimes discovered in the old; but, in whatever country the animal is met with, it always chuses the woods for it's retreat, and conceals itself under the withered leaves. From this asylum it seldom ventures, as the industry of an hour supplies it with food to support existence for several days. The manner of it's procuring it's prey is one of the most singular which natural history furnishes. It lives, as it's name implies, entirely on

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on ants and insects of a similar nature, which are found in the greatest abundance throughout those countries which give birth to this animal. In these climates the ants live in large communities, and frequently raise their hills to a very considerable height. When this animal approaches them, it creeps slowly forward on it's belly, using every precaution to keep itself undiscovered till within a convenient distance of the place where it intends to make it's banquet; then stretching itself lengthwise on the ground, it thrusts forth it's round red tongue, which is often two feet long, across the path of these industrious insects, suffering it to remain motionless for several minutes together. The ants of these regions, some of which are half an inch long, considering it only as a piece of flesh accidentally thrown in their way, swarm upon it in great numbers, but are immediately entangled; the tongue of the Ant-Eater being covered with a slimy fluid like bird-lime. When the Ant-Eater perceives it's tongue covered with a sufficient number, it instantly draws it in, and devours them: and continues to act in the same manner till it's appetite is fully gratified; when it again retires to it's hiding-place, where it remains in a state of inactivity as long as hunger will permit.

Such is the luxurious life of the Ant-Eater; a creature, of all others, apparently the most helpless. However, it finds safety from it's enemies in the privacy of it's retreat; and, in some neighbouring ant-hill, an ample supply of all it's wants. As it's chief aim is to avoid it's pursuers, it is seldom discovered: but, when driven to an extremity, though destitute of teeth, it will fight with it's claws; and it has often been known to oppose the dog, and even the jaguar, with success. It throws itself on it's back, fastens on it's enemy with all it's claws, and adheres with such strength and perseverance, that even after death it does not relinquish it's hold for a considerable time.

ANT-EATER, GREAT. This animal has a long slender nose, small black eyes, and a round short mouth. The tongue, which is about thirty inches long, lies double in the mouth. The legs are extremely slender, having four toes on the fore-feet, and five on the hind; and the two middle claws on the fore-feet are very large, strong, and hooked. The hair on the upper part of the body is black mixed with grey, and about six inches long; a black line, bounded above with white, extending from the neck, across the shoulders, to the sides. The fore-legs are whitish, and marked above the feet with a white spot: the tail, which is about a foot in length, is covered with very long coarse black hair. That beautiful specimen in Sir Ashton Lever's Museum, which is superior to any ever yet described, is seven feet four inches long; it's tail is two feet nine inches; and it's height is exactly two feet.

This species of the Great Ant-Eater inhabits Brazil and Guiana; it moves very slowly, but is capable of swimming across the largest rivers. It is, however, so fearful of rain, that when exposed to a shower it uses it's long bushy tail for a covering. This animal, as well as every species of ant-eaters, brings forth but a single young one at a time; and, on these occasions, the female is so extremely fierce, that nothing which gets within her fore-feet is able to extricate itself. Even the American panther is often unequal to the combat; for should the Great Ant-Eater find an opportunity of embracing it, she fixes her talons so deeply in it's sides, that she sel-

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dom quits her hold till after the death of her adversary. The Great Ant-Eater sleeps by day, and preys by night. It's flesh, which has a strong disagreeable taste, is esteemed excellent food by the Indians.

ANT-EATER, MIDDLE-SIZED. This, like the other species of ant-eaters, has a long slender nose, somewhat incurvated; a little mouth; and small black eyes. The ears are also small and upright; it has four claws on each of the fore-feet, and five on those behind. The hair is of a pale yellow colour, hard and shining; and a black line crosses the shoulders on each side of the neck, and meets at the extremity of the back. The tail, which is ten inches long, is taper, and covered with long hair; and the length of the body is nineteen inches. It inhabits Brazil and Guiana; and, in it's manners and instinct, exactly corresponds with the Great Ant-Eater. It is, however, capable of climbing trees, fastening itself to the branches by it's tail.

ANT-EATER, STRIPED. This is an uncertain species; but is generally described thus: the nose is long and tapering; the upper mandible is considerably longer than the lower; the eyes are extremely minute; the ears are round and short; the fore-feet are furnished with five toes; the tail is covered with long hair of an equal length; and the body is marked with longitudinal broad black stripes, the rest being of a tawny colour. The tail, which is annulated, is likewise tawny; and the belly is of a dirty white. The length of this species hardly exceeds one foot; and the tail is more than half the length of the whole body. Guiana appears to be it's native place, where it's flesh is esteemed delicious food.

ANT-EATER, LESSER. The Lesser Ant-Eater has a conical nose, with a downward incurvation; the ears are small, and almost obscured by the face; the head, limbs, and body, with the upper part of the sides and tail, are clothed with long soft silky hair, or rather wool, of a yellowish colour, inclining to brown. It has two hooked claws on the fore-feet, the exterior of which is considerably the largest; and it has four claws on the hind-feet. This animal measures about seven inches and a half in length, exclusive of the tail, which is upwards of eight inches long, thick at the base, partly naked, and tapering to a point. It also inhabits Guiana, and possesses the power of climbing trees in search of a species of ants which affix their nests to the branches.

Another species of the Lesser Ant-Eater has been discovered at the Cape of Good Hope, and in the Isle of Ceylon; having four toes on the fore-feet, and pendulous ears, which seem to distinguish it from other kinds. Kolben, in his History of the Cape, informs us, that they are toothless; that if they fasten their claws in the ground, no man possesses sufficient strength to disengage them; and that they protrude their clammy tongues, which they insert into the ants nest, and draw it into their mouths, together with the insects which adhere to it. Mr. Strachan, in his Account of Ceylon, describes an animal to which the natives give the name of talgoi, or ant-bear, after the same manner. It is therefore an unquestionable fact, that these animals, though more rare, exist in the old world as well as in the new.

ANT-LION, or FORMICA LEO. If we consider this insect in it's different stages of existence, we shall find it equally wonderful in all. In it's reptile state, however, it is essentially different from

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all others; and, in that state, it will be amusing to pursue its history. The Ant-Lion, previous to its becoming an inhabitant of the air, is of the size of a common wood-louse, but somewhat broader. It has a pretty long head; and a roundish body, which narrows imperceptibly towards the tail. The colour is a dirty grey, speckled with black; and the body is composed of several flat rings, which fall over one another. It is furnished with six feet, four of which are fixed to the breast, and two to the neck. The head is small and flat; and, in the front, there are two little smooth horns, or feelers, about a quarter of an inch long, which are hard, and incurvated at the ends. At the basis of the feelers are two black quick eyes, by which it can discern the minutest objects. To this form, so contemptibly minute, and so ill provided for the purposes of rapacity, this animal unites the most ravenous appetite. But, to mark its imbecillity still more; as other animals have wings or feet, to enable them to approach their prey, the Ant-Lion is totally destitute of whatever assistance might be derived from either. It has, indeed, a kind of legs; but these only allowing a retrograde motion, it is absolutely impossible for the Ant-Lion to move forward. Thus, famished and rapacious as it ever appears, its prey must accidentally fall within the ambushade provided for it, or the insidious assassin would inevitably be starved to death. Nature, however, bountiful to all her productions, though she has denied strength and swiftness to this insect, has endued it with cunning; so that no animal fares more luxuriously, without ever moving from its retreat. For this purpose it selects a dry, sandy soil, near the foot of a wall, or under some convenient shelter, in order to carry on its machinations secure from the rain. Instinct, indeed, seems to point out such a spot as the most proper habitation for it, since a heavy damp earth would entirely defeat its exertions. When it begins its labour, by digging a hole for the purpose of ensnaring its prey, it bends the hinder part of its body, which is pointed; and in this position works backward, forming, after several attempts, a circular furrow, which serves to mark out the size of its intended hole. Within this first furrow it digs a second; then a third; and afterwards others, which are always of less dimensions than the preceding. These preliminary operations being finished, it begins to deepen the cavity, sinking lower and lower into the sand, which it throws with its horns or feelers towards the margin; till, by repeated efforts, it is formed into a circle round the edge of the pit. This hole always represents a perfect circle; and the pit itself resembles the inside of an inverted funnel. When the Ant-Lion is newly hatched, the first pit it sinks is of very small dimensions; but, as the insect grows larger, it increases the size of its retreat; which is destined, like a pit-fall, to entrap its prey, and is generally about two inches deep, and nearly as much in diameter. This being effected, the insidious Ant-Lion lies in ambush, concealing itself under the sand in such a manner that its two horns encircle the bottom of the pit, the exterior part of which is composed of the most loose and crumbling materials; so that it is almost impossible for any insects which have once fallen into it, to creep out again. Conscious of the success of its stratagem, the Ant-Lion remains in patient expectation of its prey, and ready to avail itself of any accident which may throw some unsuspecting little animal into its power. Should an ant, a wood-louse, or a caterpil-

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lar, approach too near the edge of the precipice, the sand instantly gives way, and the unfortunate insect tumbles to the bottom of the pit, where it inevitably meets destruction. The fall of a single grain of sand gives notice to the wakeful murderer at the bottom of the cave; which never fails to fall forth in expectation of its prey. Sometimes, however, the ant or wood-louse is too nimble for its pursuer; and recovers the margin of the pit-fall before the Ant-Lion can lay hold of it: in which case, the animal has another contrivance, more extraordinary than the former; for, by means of its broad head and feelers, it possesses the power of throwing up a shower of sand, which falls on the struggling captive with tremendous weight, and precipitates it to the bottom. When the insect is thus overpowered, no efforts of its own can possibly release it: the Ant-Lion instantly seizes it with its hollow feelers; and, darting them both into its body, sucks out the juices with amazing rapacity. The prey of the Ant-Lion being thus reduced to a skeleton, it next proceeds to remove the dead carcase from its cell, lest it should alarm other insects, and prevent their near approach; taking up, therefore, the wasted trunk with its feelers, and throwing it with prodigious strength at least six inches from the verge of its den, it sets about repairing the injuries sustained in the recent contest. Nothing can abate its industry, or check its rapacity: patient, vigilant, and assiduous, it will continue on the watch for more than a month, expecting the approach of its prey; and, should the quantity exceed the calls of nature, the little voracious creature will quit the insect it has recently killed, and leave it half consumed, in order to attack any other which may happen to come within its reach. Like savage birds and beasts of prey in general, which are capable of enduring abstinence longer than the gentler tribes, it supports hunger for a period really astonishing. La Hire, of the Academy of Paris, observed, near a century ago, that the Ant-Lion could fast for seven months together; and to him we are indebted for the first notice of this surprising insect, which was soon afterwards so well described by Vallisnieri and Poupert.

When the Ant-Lion has spent about twenty months, and sometimes near two years, in the state last described, it assumes another form, and forgets its rapacious appetites, but not its industry. It no longer digs pits to ensnare the unwary; but furrows up the sand all round in an irregular manner, testifying those workings, and violent agitations, which most insects exhibit previous to their metamorphoses. These animals are produced in autumn; and, at the end of winter, they are found of all sizes: from which circumstance, it appears that they do not uniformly arrive at maturity within the same space of time, but experience their transformation at different ages. When this change approaches, if the insect finds its little cell convenient, it remains satisfied: but if it is obliged to remove, it entirely conceals itself under the sand it has raised up, where it spins a thread, after the manner of the spider; which, being formed of a glutinous substance, and humid from the moisture of its body, adheres to the little particles of sand among which it is spun, and the insect rolls up the whole into a ball, itself forming the centre. This ball is about half an inch in diameter, and the insect preserves an apartment within sufficiently capacious for all its motions. The external surface



1. ANT-EATER FLY. 2. LARGE APE, OR OURANG OUTANG. 3. PIOMY APE. 4. TUFTED APE. 5. ARCTIC BIRD.
6. ARGENTINE. 7. ARMADILLO. 8. LIZARD AST. 9. TEN-RAYED AST.

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is composed of sand and silk blended; the internal of silk only, of a fine pearl colour, extremely delicate and beautiful. But though the work is so curious within, the outside has only the appearance of a plain lump of sand; and thus escapes the notice of such other voracious animals as might be tempted to disturb the inclosed guest. In this inactive state the insect continues six weeks or two months, gradually losing it's eyes, it's feelers, it's feet, and it's skin; all which are left in the interior apartment. The insect then appears almost in it's winged state, a thin skin only enfolding the wings, which seem to be merely a thin liquid dried on the outside. The little animal, however, being yet too delicate and tender to venture from it's retreat, still continues inclosed for a short time; but, at length, it's members having acquired the necessary consistence and vigour, it tears open it's prison, and breaks through the external wall. To effect this, it has two teeth, like those of grasshoppers, with which it eats through and enlarges the aperture, till it finds it sufficiently capacious to admit it's escape. The body, which is turned like a screw, occupies only a quarter of an inch in length; while the wings, which seem confined within the smallest limits, soon begin to unfold, and now appear longer than the whole body. In short, it becomes a large and beautiful animal of the libellula species, called the Ant-Eater Fly.

ANT-EATER FLY. This insect is large, remarkably swift in all it's motions, and fierce and destructive in a degree not inferior to that of the reptile from which it derives it's origin. It frequents the meadows and bushes in France and Italy during the latter part of summer, and is so exceedingly rapacious, that it seizes on every thing which comes in it's way. The head is of a chestnut colour; the eyes are large and green; and the antlers, which are composed of twenty-four joints, growing larger to the tip, are of a deep brown. The feelers, of which there are four in number, are long and dusky; the jaws are yellow, hard, and sharp; and the two tusks are brown. The trunk is of a greyish brown, with a gilt variegation; the scutcheon is blueish; the body, which is inelegant, is of a pearly deep grey; the lines, or rings, are black; the air-holes are fringed round with brown; and the legs are short, compact, and ruddy, with long dark hairs. The wings are grey; each of the superior ones being marked with four spots of a dusky brown, and there are likewise two on each of the inferior. The nippers at the tail are corneous and chestnut-coloured.

ANTACÆUS. A term applied by Strabo to express the ichthyocolla piscis, or the isinglass-fish; and afterwards used by Johnson and others, not only to signify this fish, but the common sturgeon likewise.

ANTALIUM. A small sea shell of a tubular form, whence it is also denominated tubulus marinus. The Antalium, sometimes written Antale, is about an inch and a half in length, being of the thickness of a large quill at one extremity, and of a small one at the other. This shell, which is fluted from end to end, is of a greenish white colour, and is found as well on rocks as at the bottom of the sea. It possesses the qualities of an alkali; and was anciently held to be of considerable medicinal use.

The Antalium bears a strong affinity, in it's origin, conformation, and uses, to the dentalium.

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ANTELOPE, or GAZELL. A species of animals which can neither be referred to the goat nor the deer race, though partaking of the nature of both.

The distinguishing characters of this tribe of animals (of which some naturalists enumerate more than forty species, though Buffon makes them only twelve) are these: their horns are differently constructed from those of the deer and goat tribe, being annulated, or ringed round, at the same time that there are longitudinal depressions running from the base to the apex. They have bunches of hair on their fore-legs; a streak of black, red, or brown, running along the inferior parts of their sides; and three streaks of whirish hair on the internal sides of their ears. These are general characters; but, besides these, there are several others which they are commonly found to possess, and which are obvious to every beholder.

Like the goat, and unlike the deer, they never shed their horns, have a gall bladder, and delight more in feeding on shrubs than grass. On the other hand, they are like the roe-buck in size, as well as in delicacy of conformation; they have deep pits under the eyes, like that animal; and resemble it in the nature and colour of their hair, as well as the bunches on their legs, which only differ in being on the fore-legs of the Antelope and on the hind-legs of the roe-buck. They seem, therefore, to be of a middle nature; an intermediate link between the goat and the deer; whence it is difficult to pronounce where the goat ends and the deer begins.

Most of these animals inhabit the torrid regions; those parts, at least, of the temperate zone which lie so near the tropics as to form a doubtful climate. It is, however, remarkable that, notwithstanding the warmth of South America is well suited to their nature, not a single species of Antelope has ever been discovered in any part of the new world. Their native countries seem, therefore, to be Asia and Africa; where they multiply prodigiously, and their species are very numerous. Almost every species of the Antelope have the following general agreements: they are all animals of an active and elegant make, of restless and timid dispositions, extremely vigilant, of great vivacity, and remarkably swift and nimble.

The eyes of the Antelope are so extremely brilliant, and at the same time of such a mild aspect, that the oriental poets compare the eyes of their mistresses to those of this quadruped. Nor can it appear strange that such a comparison should be reckoned the height of gallantry among the eastern nations; when we reflect that the Greeks, those masters of literature, taste, and elegance, thought it no inelegant compliment to resemble the eyes of a beautiful woman to those of a cow.

The Antelope is, in general, more delicate and finely limbed than the roe-buck; it's hair is as short, but it is finer and more glossy. It's hind-legs, like those of the hare, are longer than the fore ones, which not only give additional swiftness, but greater security, in ascending and descending precipices; a practice in which it greatly delights. It's swiftness is equal, if not superior, to that of the roe; though the latter bounds forward, while the Antelope runs along in one uninterrupted course. The greatest number of species are brown on the back, and white under the belly, with a black stripe separating those colours. The tail is of various

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rious lengths, but always covered with pretty long hair; and the ears, which are beautiful and well placed, terminate in a point. The hoof is cloven, like that of the sheep; and the horns are perennial, those of the female being considerably smaller than the male's. Indeed, on comparing the Antelopes one with another, we find very inconsiderable variations between them. The turn or magnitude of the horns, the different spots in the skin, or diversities of size, constitute the principal marks by which the several species are distinguished; for their mode of living, habits, and peculiar swiftness, fall under one general description.

Antelopes being inhabitants of the more sunny climes, greatly contribute to add beauty to those forests which are perpetually green. They are often seen feeding in herds on the sides of the mountains, or the skirts of the woods, and fly all together on the slightest intimation of danger. Indeed, they run with such amazing swiftness, and are so extremely timid, that dogs or men usually pursue them in vain. They traverse, with safety and facility, those precipices which would be wholly impassable by every other quadruped except the goat; nor can any animals, not of the winged tribe, by any means exceed them in swiftness. On this account, they are commonly pursued by falcons; and that curious method of hunting forms one of the most favourite amusements among the grandees of the east.

The Arabians, Persians, and Turks, carefully breed up, and train for this purpose, that species of hawk, which we call the gentle falcon. The hunter sallies forth on horseback, among the woods and mountains, with one of these falcons perched on his right-hand, preserving the most profound silence; and the dogs, with which he is also attended, are taught to hang behind; while the attendants, mounted on fleet couriers, look out for game. When they perceive an Antelope at a distance, they direct the falcon's eye to the spot, and animate it to pursue. It immediately flies with incredible swiftness to the animal; which, apprized of its danger, endeavours to escape, but generally without effect. The falcon, on overtaking its prey, fixes one talon into the animal's cheek, and the other into its throat: on this the wounded Antelope increases its speed; but the falcon usually makes its attack with such success as to prevent the animal's running far, clinging with the most resolute perseverance to its prey, nor ever quitting it till it falls. The hunters then approach, and at once seizing the Antelope, and disengaging the falcon, reward the latter with the blood of the spoil. They also apply young falcons to the throat of the dead animal, for the purpose of early accustoming them to fix on that particular place; since, were the falcon to attack any other part of the Antelope, either on its back or haunches, the animal would easily escape among the mountains, and thus both would be irretrievably lost.

Nor is this the only method by which these fleet and wary animals are subdued. The ounce, a carnivorous and savage creature, is trained for this purpose, to sit on horseback behind the hunter; where it remains with the utmost composure till he gets sight of the prey. It then exerts all its arts, and all its fierceness; not darting precipitately on the Antelope, but turning and winding about till it comes within the proper distance; when, swift as lightning, it darts on the incautious animal, kills it instantaneously, and riots on the blood.

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But if the ounce happens to miss its aim, it returns to its place without attempting an ineffectual pursuit, and seems ashamed of the failure of its artifice.

There is still another way of taking the Antelope; but which seems neither so certain, nor so amusing, as either of the former. An Antelope being bred up tame, is taught to join its own kind the moment it sees them. When, therefore, the hunter discovers a herd of Antelopes together, he contrives to fix a noose round the horns of the domestic animal, so that if any of the wild ones merely touch it with theirs, they are sure to be entangled; and, thus prepared, he sends it among them. The tame animal no sooner approaches the wild herd, than the males sally forth to oppose it; and, butting with their horns, are caught in the noose. In this condition they struggle together till both fall to the ground: when the hunter comes up; and, disengaging the tame animal, kills or secures the other.

But notwithstanding all the artifice of man, and the ingenuity he displays in these several modes of destruction, the Antelope is extremely difficult to be caught. Continually exposed to alarms from beasts of prey as well as man, and seemingly conscious of the number and the artifice of its enemies, it places its principal dependence for protection on the nature of its situation, and chiefly resides in the most solitary and inaccessible places.

ANTELOPE, COMMON. The Common Antelope is somewhat inferior in size to the fallow-deer, but resembles it in all the proportions of its body. It is furnished with upright horns spirally twisted, and encircled almost to the top with prominent rings; the horns being about sixteen inches long, and twelve inches distant from point to point. The colour of this animal is brown mixed with red, and dusky; its belly and the insides of its thighs are white; and it has a shortish tail, black above, and white beneath. The female of this species is destitute of horns.

This animal is a native of Barbary. Its horns, before they are separated from the skull, are not much unlike the figure of the ancient lyre; and, indeed, it appears, from several antique gems, that the sides of that instrument were frequently made of the horns of animals.

ANTELOPE, BLUE. The colour of this animal, while it ranges its native woods, is a fine blue; but, after death, it changes to a blueish grey mixed with white. The horns are twenty inches long, sharp pointed, taper, and bending in an arch backwards; they are marked with twenty prominent rings, but become perfectly smooth towards the points. This species, which is somewhat longer than the common buck, is covered with long hair, that on the belly being white. The tail is seven inches long; and, beneath each eye there is a large white mark. From the length of its hair, and the construction of its horns, this animal seems to connect the genus with that of the goat. It inhabits the interior parts of Africa; and is called by the Dutch at the Cape of Good Hope, the blawme bock, or blue goat.

ANTELOPE, EGYPTIAN. The horns of this animal are straight, slender, and annulated. They are near three feet long; and the space between their tips is fourteen inches. They have a black triangular spot at the base, bounded on each side with white; and, in the centre of the face, there is a similar spot, besides two others which fall from the eyes

eyes to the throat, forming a junction with that in the face by a lateral band of the same colour. A black line extends from the neck to the loins, composed of hairs longer than the rest; the neck, back, and sides, are of a dark grey; and the breast and belly are a lively white. The tail, which is about two feet long, is terminated with long black hair. This species is about the size of a buck; and seems most attached to the plains; inhabiting Egypt, the Cape of Good Hope, Persia, Syria, Arabia, and India. The Dutch at the Cape distinguish it by the name of the chamoise.

ANTELOPE, ALGAZEL. This antelope is described by Buffon to be of a red colour, having the breast and buttocks white: the horns are long, slender, and upright, bending internally towards the top; and sometimes they are extremely full of annulations, though on others of the same species there are very few. This beautiful creature inhabits Bengal, Lybia, Egypt, and some other tropical countries. It runs with amazing agility up the steepest precipices, but in the plains its pace seems considerably retarded. It is very difficult to be caught; but when once accustomed to a domestic state, it becomes remarkably tractable. Some naturalists suppose this to be the antelope leucoryx of Oppian, of which two drawings are preserved in the British Museum; but there are certainly some material variations, though probably not sufficient to constitute a distinct species.

ANTELOPE, BEZOAR OR PASEN. This animal, in its general figure and conformation, resembles those antelopes already described, except that there is a small variation in its horns; and that it has several qualities and dispositions peculiar to itself. It never ventures in the plains, but inhabits the most inhospitable and rocky mountains; particularly those of Persia: it is, however, not unfrequently found in Egypt and Arabia. This antelope is one of those animals famous for producing the Bezoar, a concretion formed in the intestines or stomach, which was once held in the highest reputation for its fancied medicinal virtues. This stone is generally found from the size of an acorn to that of a pigeon's egg; its value increasing in proportion to its magnitude. It was formerly sold at a most extravagant price: but the general diffusion of science (over the European countries, at least) has taught mankind to investigate its real qualities; which appearing to have been greatly magnified by credulity, the value of Bezoar is of course now much decreased. It is sometimes of a blood colour, and at others of a pale yellow, and all the intermediate shades. Its surface is generally smooth and glossy; and, on being broke, it emits a fragrant smell like ambergris, which probably originates from the aromatic food on which the animal subsists. The use of Bezoar, however, is now almost universally exploded by judicious physicians; though it still retains its supposed value in those regions where the knowledge of nature is not far advanced. Experience, indeed, has not only convinced mankind in general that few cures are to be ascribed to this substance; but, on the contrary, that it even proves fatal to the animal from which it is produced. These kind of concretions, however, do not appear to be peculiar to this creature alone; they are found in almost every tribe of animals, the carnivorous kinds excepted; and evidently arise from the practice of licking off their hair, which grows into balls, in the intestines, of the size and nature already described.

ANTELOPE, HARNASSED. This species of antelope is a native of Senegal, principally frequenting the plains and woods. Its colour is a deep tawny; and its sides are most curiously marked with two transverse bands of white intersected by two others from the back to the belly. On the rump are three white lines pointing downwards on each side; and its thighs are spotted with white. The tail is only ten inches long, and covered with long rough hairs. The ears are broad; and the horns, which are straight, are nine inches long, pointing backwards, with two spiral ribs. The Dutch at the Cape of Good Hope give this animal the title of the bonte bock, or spotted goat.

ANTELOPE, AFRICAN. This animal, which is about eighteen inches high, is of a most elegant and beautiful form. The horns are straight, slender, sharp-pointed, slightly annulated at the base, and about three inches long. In the middle of the head, between the horns, is an upright hairy tuft; and on both sides, between the ears and the nose, are deep cavities, containing a yellow, oily fluid, which coagulates into a strong-scented substance, somewhat between the musk and the civet. This being collected, the liquid again flows out and coagulates. Some have supposed this to be the tears of the animal; but as the cavities containing the fluid have no communication with the eyes, we cannot subscribe to this opinion.

The colour of the neck and body of this animal is brown, with a slight tinge of yellow; the belly is white; and the tail, which is black above, and white beneath, is short. The females are distinguished by being destitute of horns.

ANTELOPE, INDIAN. This animal is about five feet high, thick-bodied, and strongly made; but possessed of slender legs in proportion to its magnitude. The horns are thick and straight, marked with two prominent spiral ribs, for a considerable way from the base, but smooth towards the points. The head is of a reddish hue; the forehead is broad; and the nose is pointed. On the forehead grows a line of long loose hairs; and, on the inferior part of the dewlap, a considerable tuft of dusky hair. A short black mane extends from the head quite to the tail. The rest of the body is of a blueish grey colour, slightly tinged with red. The tail is short, covered with short ash-coloured hair, and terminated by a large tuft of long black hairs. The females of this species (to which the Hottentots give the name of emphosphos) have horns like those of the males.

The Indian Antelope also inhabits the southern parts of Africa, and appears to have a strong predilection for the mountainous parts of that country. Being naturally fat and fleshy, it is slow-paced, when compared with many of the antelope race; and, consequently, falls an easier prey to the hunters, who greatly esteem its flesh.

ANTELOPE, ROYAL. The Royal Antelope, called also the Chevroin, or Little Guinea Deer, is perhaps the smallest and most beautiful of all cloven-footed quadrupeds. Its legs, when thickest, are not much larger than a goose-quill. It is about nine inches in height, and fourteen in length from the point of the nose to the insertion of the tail. Its shape is delicate beyond description; and it appears like a stag in miniature, except that the horns of the male (for the female has none) are hollow, and annulated like those of the antelope tribe. It has broad ears; and, having two canine teeth in the upper-jaw, differs in that

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respect from all other animals of the goat and deer kind, and therefore ought systematically to form a distinct genus of itself. The colour of this animal, which is commonly a fine yellow, (except the neck and belly, which are white) is no less beautiful than its figure is pleasing. Its hair is extremely short, and possesses a charming gloss.

The Royal Antelope is a native of Senegal, and the hottest climates of Africa. It is remarkably nimble for its size, bounding over a wall twelve feet high with the greatest facility. Its swiftness, however, does not always protect it; the negroes frequently overtake it in the pursuit, and kill it with their clubs. When domesticated, which is easily effected, it becomes entertaining and familiar; but such is the extreme delicacy of its constitution, that it cannot endure transportation from its native soil.

ANTELOPE, INDOSTAN. This animal is a native of the most distant parts of the Mogul's dominions. It chews the cud; lies down and rises after the manner of camels; and makes a kind of croaking noise nearly resembling that of a deer in rutting time. This antelope grows to about four feet in height, and has a large lump on its shoulders somewhat resembling that of the Indian ox. The horns are seven inches long, projecting forward; and the neck, which is peculiarly strong, has likewise a bend forwards like that of the camel, on the top of which is a short mane. Its posteriors resemble those of an ass; and the tail, which is about twenty-two inches long, is terminated with long hairs. Its legs are slender; and, on the lower part of the breast, the skin hangs loose like that of a cow. Its hair is short, smooth, and commonly of a light ash-colour, though dusky in some parts; the lower part of the breast, and under the tail, is white; and on the forehead there is a black spot in the form of a diamond.

ANTELOPE, WHITE-FOOTED. This animal measures upwards of four feet to the top of the shoulders, and nearly the same in length from the bottom of the neck to the insertion of the tail. Its horns, which are short, project a little forward; and its ears are large, and marked with two black stripes. It has a short black mane, extending half way down its back; and a tuft of long hairs on the fore-part of its neck; above which is a large white spot; another on the chest between the fore-legs; a third on each fore-foot; and two on each hind-foot. Its tail is pretty long, and tufted with black hairs. The colour of the male is a dark grey; but that of the female a pale brown. The female is destitute of horns, but has a mane, tuft, and striped ears, like the male. This animal inhabits the interior parts of Indostan, and is sometimes brought down to the British settlements by the natives, as a great curiosity. Some of the White-footed Antelopes have been imported into England; where, notwithstanding the surprising difference of climate, they have been known to breed and thrive surprisingly. During the reign of Aurengezebe, these beautiful creatures were much esteemed for the diversion they afforded in hunting. According to Bernier, that warlike prince, when on a journey, used to inclose them within nets; which, being gradually drawn within narrow limits, the king and his grandees entered the circle, and dispatched them with spears and other weapons: and this, indeed, is a very common method of destroying wild beasts in many oriental countries.

The White-Footed Antelopes, when habituated

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to a domestic life, are in general extremely docile, and express a peculiar affection for those who feed them: sometimes, however, they are very vicious and formidable. In their natural state, the males fight with the utmost ferocity. They drop on their knees at a distance from each other, and in that attitude commence their approaches; springing forward, when sufficiently near, with incredible animosity.

ANTELOPE, RED. The Red Antelope is about four feet long, and two feet three inches high. The horns are about five inches and a half in length, and slightly annulated at the base; the ears are considerably longer than the horns; and the hair, which is stiff and glossy, is in every part of a reddish colour, but palest on the chest. This species inhabits Senegal and the Cape of Good Hope, where it greatly abounds, and is esteemed very excellent food.

ANTELOPE, SWIFT. The length of this animal is about three feet ten inches; and the height two feet ten inches. The horns are round, eight inches long, and reverting at their extremities. This species of antelope varies in colour, but is in general tawny: the lower part of the sides, the belly, the rump, and the thighs, are white; and it has also a white spot on the fore part of the neck. It is a native of Senegal, and is reckoned the swiftest of this race of animals, as its name imports.

ANTELOPE, STRIPED. The length of this animal is nine feet; and its height four. The body is long and slender; and the legs are peculiarly delicate and fine. The face is brown, marked with two white lines proceeding from the corner of each eye, and uniting above the nose. The colour of the body is generally reddish, with an admixture of grey. It has a white stripe along the top of the back, extending from the shoulders to the tail; and from this seven others branch out, four pointing towards the thighs, and three towards the belly. The breast and belly are grey; on the upper part of the neck is a short mane; and there are a few hairs hanging down from the throat to the breast: the situation, number, and direction, however, of these stripes, from which this creature receives its name, have been observed to vary. The tail is about two feet long, brown above, white beneath, and black at the extremity. The Striped Antelope is said to possess uncommon agility; and the height of its leaps is really beyond conception. It is a native of the country of the Caffres, where it is called coedoes.

ANTELOPE, FLAT-HORNED. This animal, the kevel of Buffon, is the size of a roe-buck, having very curious horns, flatted on the sides, and containing from twelve to fourteen rings. The colour of the superior part of the body is a reddish brown; the inferior part, and buttocks, are white; along the sides the two colours are divided from one another by a strong dusky line; and on each knee is a tuft of hair. This species is gregarious, and inhabits Senegal. It is easily domesticated, and its flesh is agreeable.

ANTELOPE, WHITE-FACED. The White-Faced Antelope is superior in size to the fallow-deer. The length of the animal is upwards of five feet, and the height, to the summit of the shoulders, is three feet. Its horns, which are similar to those of the flat-horned antelope, are sixteen inches long, five between tip and tip; annulated in the male, but smooth in the female. Its face, and the space between the horns, are both of a pure lively white; the cheeks and neck are of a fine bright bay; the back is cinereous, blended with red, having a dark stripe

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stripe along the middle; the sides, flanks, and shoulders, are of a deep brown, a broad band of a darker colour dividing them from the belly, which is wholly white, as well as the rump, and a small space above the tail. The tail itself, which is about seven inches long, is covered with coarse black hairs, extending four inches beyond the stump. This species of antelope inhabits the countries north of the Cape of Good Hope; and a beautiful specimen is preserved in Sir Ashton Lever's Museum.

ANTELOPE, CHINESE. The length of this animal is about four feet and a half. Its horns are nine inches long, of an opaque yellow colour, reclining backwards, with their points bending towards one another, and annulated almost to their extremities. The head is rather clumsy; the nose is obtuse; the ears are small and sharp-pointed; and on the middle of the neck grows a considerable protuberance, occasioned by the peculiar structure of the wind-pipe. On the approach of winter, the hair of this animal grows along, rough, and hoary; so that at a distance it appears almost white; but, towards the beginning of May, it exchanges its coat for another, which is short, thick, and of a tawny hue. These antelopes are very numerous in Chinese Tartary, and on the frontiers of China and Thibet: they also inhabit the borders of India; and thousands of them herd together near the Lake Baikal. They are prodigiously swift; and, when alarmed, bound near twenty yards with the greatest facility. They are naturally shy and timid, frequenting dry and rocky plains; and are so very fearful of water, that even the most imminent danger cannot compel them to enter that element. During the winter season, they herd in great numbers, but separate again on the approach of spring. The Tartars hunt them with the utmost eagerness, and esteem their flesh very delicious food. Their horns form a considerable article of commerce, and are in high estimation among the Chinese. Naturalists seem to doubt whether they have any particular voice, as they seldom emit any which can be regarded as natural. When young, they are easily tamed.

ANTELOPE, SPRINGING. The Springing Antelope is a very elegant species, rather less than the roe-buck. Its horns are slender, annulated half their length, and twisted spirally; the ears are very long and dusky; and the tail depends to the first joint of the leg. The face, cheeks, throat, and part of the under side of the neck, are white, with a dusky line passing from the base of each horn, beyond the eyes, to the extremity of the mouth. The upper side of the neck, and part of the lower, as well as the back, sides, and exterior parts of the limbs, are of a pale yellowish brown; the chest, belly, and interior parts of the limbs, are white; and the sides and belly are divided by a broad chestnut band, which runs down part of the shoulders. The upper part of the tail is white, and the lower black; the buttocks are white; and from the tail, half way up the back, there is a white stripe, which the animal possesses the power of contracting or expanding at pleasure. This species of antelope inhabits the Cape of Good Hope, and receives its epithet from the prodigious springs it takes on perceiving any of the human form. It migrates annually from the interior countries, and takes up its residence in the vicinity of the Cape for two or three months, and then returns in troops of many thousands, attended by numbers of beasts of prey, which make dreadful destruction among them. These migrations are

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probably owing to a deficiency of pasture, occasioned by the excessive droughts to which some latitudes are subject; particularly that of Terra del Natal, where sometimes a single drop of rain does not fall during the space of two or three years.

ANTELOPE, SCYTHIAN. The height of this animal is about two feet and a half, the length four feet nine inches, and the tail is about three inches long. Its head resembles that of a sheep; its nose is very large, arched, and marked the whole length with a small line; and the cutting-teeth are placed so loose in their sockets, that they move with the smallest touch. The horns of the male, which are of a pale colour, and the greatest part of them almost transparent, are about a foot long, bending a little in the middle, the points inclining inwards, the ends smooth, and the rest annulated. The females are destitute of horns, and extremely timid. During the summer months, the hair of this species is very short, and of a greyish colour, with an admixture of yellow; the space above the cheeks is whitish; the forehead and crown are hoary, and covered with long hairs; and the under-side of the neck and body are white: but, in winter, the whole covering is long, rough, and hoary. These animals inhabit the Arabian deserts; and they are likewise found in Poland, Moldavia, and in the vicinity of the Caspian Sea. They seem to have a peculiar predilection for the most dreary sterile spots, where the nature of their food gives their flesh a flavour highly disgusting to many palates. The females generally bring forth their young in May, and only one at a time; notwithstanding which, the numbers of these animals are prodigious. The young of this species are covered with a soft fleece, curled and waved like new-dropped lambs. These animals are migratory; and, in the rutting season, which is late in autumn, they collect in thousands, and retire into the more southern latitudes. In spring, they again divide into little flocks, and wander northward, continually shifting their residence. These creatures are remarkable for their vigilance; and, by a kind of instinct, never all lie down to rest at the same time: while the majority repose, some watch as centinels; and, in their turn, are succeeded by others thus refreshed. By this precaution, which strongly marks their sagacity, they guard against the approaches of wolves, and baffle the stratagems of the hunters.

Though the Scythian Antelopes outstrip the swiftest couriers, they are often overtaken through timidity and shortness of breath. While running, they seem to incline to one side, and scarcely to touch the ground; but no sooner does a dog give them the slightest wound, than they instantly tumble down, without the least appearance of resistance. In a state of nature, they have no voice; but, when brought up tame, they utter a sound nearly resembling the bleating of sheep. The heat of the sun, reflected from the sandy deserts which they traverse, renders them almost blind in summer, or at least extremely short-sighted; and, of course, more liable to be caught. Of all animals of the kind, this species seems to be the most libidinous, and vigorous. If caught young, they are capable of being rendered very docile and domestic; but, when old, they become wild and untractable, and refuse every species of sustenance while in a state of confinement. The hunters pursue them with guns, dogs, or black eagles trained up to this kind of falconry; and they always approach them against the wind, lest these creatures should smell their enemies;

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enemies; and carefully avoid falling forth in gaudy colours, which might attract the notice of their destined prey, and warn them of the impending danger.

ANTELOPE, CERVINE. This is the bubalus of antiquity, and the bekker el wash of the Arabs; a most singular animal, partaking of the mixed natures of the cow, the goat, and the deer. It resembles the stag in the size and figure of its body, and particularly in the conformation of its legs; but it has permanent horns like those of the goat, and formed entirely like those of the antelope genus. It also resembles that animal in its way of living; however, it differs widely from it in the shape of its head, being exactly like the cow in the length of its muzzle, and in the disposition of the bones of the skull, from which similitude it received its ancient name. The head of this animal is long and narrow; the eyes are placed very high; the forehead is short and narrow; and the horns, which are about a foot long, are black, thick, and annulated, the rings being remarkably large. Its shoulders rise very high, and it has a kind of bunch on them, which terminates at the neck; the tail measures about a foot, and is tufted at the extremity. The hair of this animal is remarkably thicker at the middle than at the root; for, in all other quadrupeds, except this and the elk, the hair tapers off from the bottom to the point; but, in these, every hair seems to swell in the centre. The bubalus resembles the elk as well in size as in the colour of its skin; but these are the only similitudes between them, the one having a very large branching head of solid horns, annually deciduous, while the other has black, unbranching, hollow horns, which never fall. The colour of this animal is a reddish brown: but it is white about the rump, the inner side of the thighs, and the lower part of the belly; and a dark space occupies the top of the back, the front of the upper part of the fore legs, and the hinder part of the thighs. It inhabits Barbary, and probably other parts of Africa; and is also met with towards the Cape of Good Hope. It is a gregarious animal; gallops apparently with a heavy pace, yet making amazing progress; and, when it fights, it drops on its knees, like the white-footed antelope, already described.

ANTELOPE, SENEGAL. The head and body of this animal are of a light reddish brown, with a narrow black list down the hind part of the neck; its rump is of a dirty white; and on each knee, and above the fetlock, it has a dusky mark. The hoofs are small; and the tail, which is covered with coarse black hairs, is about a foot long. Its horns are almost close at the base, but bend outwards very considerably a little above: towards the end they approach each other again, receding near the points, which bend backwards. In the centre they are above six inches distant, higher up only four, and six at the extremities. They are seventeen inches long, and eight in circumference at the base, being surrounded with fifteen prominent annulations, which become smooth and sharp at the points. The ears of this creature are seven inches long; and its head is large and clumsy, measuring about eighteen inches. This species inhabit Senegal, where the French call it la grande vache brune, or great brown cow.

The petite vache brune of Buffon, called the Gambian Antelope by Pennant, nearly resembles the former in its figure and colour, but is in-

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ferior in size. Its horns are differently constructed, being thirteen inches long, and five and a half in circumference at the bottom; they approximate each other at the base and extremities, but have a considerable curvature in the middle; and they are surrounded with eight or nine annulations at the base, but become perfectly smooth at the extremities.

ANTENNÆ. See FEELERS.

ANTHIA. A title by which some naturalists very improperly describe the *falx venetorum*, or fickle fish, a long anguilliform fish of the *tænia* kind.

ANTHIAS. The name of a fish somewhat resembling the *turdus* or wrasse family, of which some have described four species; but Linnæus, with more propriety, refers it to the *labrus*.

ANTHROPOGLOTTUS. An animal endowed with the power of speech like a man, or having a tongue of similar formation. Under this distinction are comprehended the parrot kind, on account of their broad, thick, and muscular tongues, by which they are enabled to speak, and to roll their meat from side to side under the edges of their bills.

ANTHROPOMORHPA. In the Linnæan system, a class of animals in some degree resembling the human form; under which designation this author includes apes, monkies, maucaucos, and bats. This appellation is derived from *Anthropos*, a Man; and *Morphe*, a Form.

ANTHUS. A name by which Aldrovandus, and some other naturalists, have distinguished that species of the *œnanthe* commonly known in England by the appellation of the whin chat.

APE. A numerous tribe of animals chiefly confined to the torrid zone, which are furnished with hands instead of paws; their ears, eyes, eyelids, lips, and breasts, are like those parts in the human race; their internal conformation also bears some distant resemblance to the human; and their whole figure exhibits a picture sufficiently mortifying to the pride of those who make their persons the principal objects of their admiration. These animals have fingers and nails on their hands like those of a man, but more rough and unpolished; their feet are like larger hands, being divided into fingers and toes, of which those in the middle are the longest. They are also extremely lively, agile, and full of frolic, chatter, and grimace; and, from the peculiar structure of their bodies, they are capable of many actions peculiar to human beings. They are, in general, fierce and untractable; though some of them are of a milder nature, and will sometimes shew a considerable degree of attachment, though naturally mischievous, filthy, obscene, lascivious, and addicted to thieving. They inhabit the immense forests of India, Africa, and America; live in trees; and feed on fruits, leaves, and insects. They bound from one tree to another with surprising agility, even when loaded with their young, who cling closely to them on every appearance of danger. In general, they are gregarious, living in vast societies, but the different species are never found intermixed. They are the prey of leopards, and other animals of the feline kind; and considerable numbers of them are frequently devoured by hideous serpents, which inhabit the forests, and sometimes pursue them to the very summits of the trees, and swallow them entire. Though not naturally carnivorous, they will rob the nests of birds purely for the sake of mischief,

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mischievous, and destroy both the eggs and the young. In those countries, therefore, where Apes most abound, the feathered tribe discover a remarkable degree of sagacity; contriving their nests with the utmost ingenuity, and placing them in such situations as may render them least liable to the observation, or wholly beyond the reach, of these invaders. These animals, however, are very different from one another; and their numbers, and various conformations, render it necessary to methodize and subdivide the genus.

In the Ape kind, properly so called, we see the whole external machine strongly impressed with the human similitude, and seemingly capable of the same exertions: they walk erect; are without tails; and have fleshy posteriors, calves to their legs, and feet nearly like those of men.

In the baboon kind, or second division, we perceive a more distant approach to the human form. These, which generally go on all-fours, but have the power of erecting themselves at pleasure, have short tails, long snouts, and are possessed of brutal fierceness.

In the monkey kind, or third division, which are removed a step farther from the human form, the size of the animal becomes much more diminutive, the tail long, and the face flattish.

APE, LARGE, OURANG OUTANG, or WILD MAN OF THE WOODS. Names given indifferently to various animals, agreeing in one common character of walking upright, but natives of countries, and possessing proportions and powers extremely dissimilar. The troglodyte of Bontius, the drill of Purchas, and the pigmy of Tyson, have all received this general appellation; and, by some naturalists, they have been ranked under one general description. If credit be given to the reports of many travellers, we are, under this name, presented with a formidable animal from six to eight feet high; while others, of equal authority, make it no more than three or four. In this diversity of accounts, we must be satisfied with blending the whole into one general description, having no reason to dispute any of their relations.

The Ourang Outang, then, which of all other animals most nearly approaches the human form, appears to be of different sizes; from three to six, seven, and even eight feet high: in general, however, its stature seems to be much less than that of man; but it far exceeds him in strength and agility. Travellers who have had opportunities of seeing several of these animals in their native solitudes, give surprising relations of their force, their swiftness, their address, and ferocity; while such naturalists as have viewed them only in a state of captivity, have chiefly admired their patient, pliant, imitative dispositions, with that curious appearance and conformation which render them so nearly human. Several of the smaller species of these animals have occasionally been exhibited in England; but that observed by Dr. Tyson is best known to naturalists, having been described with astonishing minuteness and precision. This animal, in the description of which that learned physician displayed so much ingenuity, was brought from Angola; having been caught in the internal parts of that country, with a female of the same species, who died before she could be transported into Great Britain. The body was covered with black hair, more resembling that of the human species than of brutes; and, in its different lengths,

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it bore a still stronger similitude to that of man; for, in all those parts where it is longest on him, it was also longest on the Ourang Outang. The face nearly resembled that of a man; the forehead, however, being larger, and the head more orbicular: the upper and lower jaws were not so prominent as in monkeys; but flat, like those of mankind. The ears were exactly like those of the human race; and the teeth bore the same resemblance: the joints of the arms and legs were likewise the same as in man; and, in short, the animal, at first view, exhibited a figure almost wholly human.

However, on a more minute inspection, the variations between this creature and the human race, and the comparative imperfections of its form, became plainly conspicuous. The first obvious difference was in the flatness of the nose; the next, in the lowness of the forehead; and the deficiency of the prominence of the chin: the ears, likewise, though regularly formed, were disproportionably large; the eyes too close to each other; and the interval between the nose and mouth too extensive. The thighs were too short, and the arms too long; the thumb too small; and the palms of the hands too narrow: the feet also had less the conformation and appearance of hands than at first glance they appeared to possess; and, if we may judge from the figure, the animal had too great a bend with its hams. On an anatomical examination, however, a surprising similitude was seen to prevail in the internal conformation; though it differed from man in the number of ribs, having thirteen, whereas he has only twelve: the vertebrae of the neck were also shorter, the bones of the pelvis more narrow, the orbits of the eyes deeper, the kidneys rounder, the urinary and gall-bladders longer and smaller, and the ureters of a different shape.

Such were the principal distinctions between the internal parts of this animal and those of man; in almost every other respect they were exactly the same: indeed, many parts were so much like those of the human species, that it seemed astonishing they should not be productive of greater advantages. The tongue, and all the organs of the voice, were the same as man's; and yet the animal was dumb; and the brain was likewise formed in the same manner as his, though the creature was destitute of reason: an evident proof, as Buffon very beautifully observes, that no disposition of matter can constitute a mind; and that the body, however nicely soever constructed, is constructed in vain, when no soul is infused into it for the purpose of directing its operations.

The back and posteriors of the Ourang Outang, as described by Dr. Tyson, were exceedingly hairy; and this covering was so thick, that the skin was with difficulty discerned: but, in front, the hair was considerably thinner, the skin every where appearing, and in some places being almost bare. When it went on all-fours, it appeared entirely hairy; but, when it stood erect, the difference we have just noticed between the back and front was immediately conspicuous. The hair had none of that finer and shorter fur intermixed, which is usually seen on brutes, but was wholly of one kind; except only that it was greyish, and a little longer, about the pubes, and on the upper lip and chin. The face, hands, and soles of the feet, were perfectly clear, as was also the greatest part of the forehead; but, down the sides of the face, the hair was thick, being there about an inch and a half long,

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which exceeded the length of that on the body. The lines in the palms of the hands were plainly distinguishable, and, at the tips of the fingers, those spiral ones common to man were distinctly marked: the palms of the hands, however, were as long as the soles of the feet, and the toes were of the same length as the fingers. The middle toe was longest, and the conformation of the whole foot differed essentially from that of the human species. The hinder-feet being thus formed, the animal often used them as hands; and, on the contrary, sometimes used it's hands instead of it's feet. The breasts appeared small and shrivelled, but exactly like those of a man: the navel, too, appeared very fair, and well-disposed; being neither harder, nor more prominent, than it is usually seen in children.

Such is the doctor's description of this extraordinary animal; to which little has been added by succeeding observers, except that the colour of the hair is often found to vary: and in that drawn and described by Edwards it was of a reddish brown.

A picture so nearly resembling that of the human species, naturally leads us to expect a corresponding mind; and certain it is, that such of these animals as have been seen in Europe, display a degree of imitation beyond what any quadruped is capable of attaining. The Ourang Outang of Tyson was a gentle, fond, and inoffensive creature. During it's passage to England, it would embrace such of the sailors as paid it any particular attention with the utmost tenderness; opening their bosoms, and clasping it's arms about them. It regarded monkeys, and even Apes of a lower species, with the most irreconcilable aversion; studiously avoiding the place where they were kept in the same vessel, and seemingly regarding itself as a very superior creature. After it had for some time been accustomed to the use of cloaths, it became very fond of them; and would itself put on part without any help, carrying the rest to some of the ship's company for assistance. It would lie in bed, place it's head on the pillow, and pull the cloaths upwards to cover itself, in the same manner as a man.

But the animal seen by Edwards, and described by Buffon, shewed a still superior degree of sagacity. It walked on two legs, even when it carried a burden; it's air being always melancholy, and it's whole deportment tinctured with gravity. Dissimilar to the baboon or monkey, whose motions are violent, and their appetites capricious; who are fond of mischief, and submissive only through fear; this animal was deliberate in it's motions, and a look was sufficient to intimidate it. 'I have seen it,' says Buffon, 'give it's hand to shew the company to the door. I have observed it sit at table, unfold it's napkin, wipe it's lips, make use of the spoon and fork to carry it's victuals to it's mouth, pour out it's drink into a glass, join glasses when invited, take a cup and saucer and place them on the table, put in sugar, pour out tea, and leave it to cool before drinking; and all this at the slightest intimation from it's master, and frequently without being required.' It was docile and inoffensive; approached strangers with respect; and seemed rather to expect caresses, than disposed to offer injuries. It was particularly fond of sugar-ed comfits, which every one readily gave it; and, having a defluxion on the breast, so much sweet food contributed to increase it's malady, and shorten the period of it's existence. It continued in Paris only one summer; and, being brought to Eng-

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land, died a short time after in London. It eat indiscriminately of all things; but seemed to prefer dry and ripe fruits: it would drink wine in small quantities; but gladly exchanged it for milk, tea, or any other sweet beverage.

Such have been the habits and dispositions of these animals when brought into Europe: but many of these extraordinary instances of docility were probably the effects of education, and we are not informed how long the instructions they received for this purpose were continued. We learn, however, from another account, that they take but a very short time to arrive at a great degree of imitative perfection.

Le Brosse bought two young ones, only a year old, of a negro; and these, at that early age, discovered an astonishing power of imitation: even then they sat at table like men; eat of every thing indiscriminately; made use of knives, forks, and spoons, both to eat their meat and help themselves, with extraordinary adroitness and decency; and drank wine, and other liquors. When carried on shipboard, they made signs to the cabin-boys, expressive of their wants; and, whenever the lads neglected attending them, they fell into violent passions, seized them by the arms, bit them, and kept them down. The male was sea-sick, and required attendance like a human creature: he was even twice bled; and ever afterwards, when he found himself disordered, held out his arm, as desirous of being relieved by bleeding.

Pryard relates that, in the country of Sierra Leona, in Africa, there are a kind of Apes called baris, which are strong and muscular; and, being properly trained from their youth, can even pound at a mortar, and in other respects act as very useful domestics. They usually walk upright; and, going to the river for water, carry it in little pitchers on their heads; which, however, must be carefully taken from them at their return, as they otherwise let them fall, and set up a melancholy cry and lamentation on beholding the fragments.

La Compte gives nearly a similar account of an Ape which he brought from the Straits of Molucca. It walked on it's two hind-feet, a little bent like those of a dog learning to dance; and made use of it's hands and arms in the same manner as the human species. It's visage was not more disagreeable than that of a Hottentot; but the body was entirely covered with woolly hair of different colours. It cried like a child; and all it's external actions so much resembled those of the human race, and the passions were so lively and significant, that a dumb man could hardly express his conceptions and desires with more effect: it had also that expression of passion, or joy, which we often see in children; stamping with it's feet, and striking them against the ground, to shew it's spirit, when refused any thing it greatly desired. 'Though these animals,' continues La Compte, 'are very big, (for what I saw were four feet high) their agility is incredible. It is a pleasure beyond expression to see them run up the tackling of a ship, where they sometimes play, as if they had a knack of vaulting peculiar to themselves, or as if they had been hired as rope-dancers to divert the company. Sometimes, suspended by one arm, they poise themselves, and then turn all of a sudden round about a rope with as much velocity as a wheel or a sling put in motion: at others, holding the rope successively with their long fingers, and letting their whole bodies fall into the air, they run full speed from one end to the other, and come back

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back again with the same expedition. There is no posture they do not imitate, nor any motion they are at a loss to perform: bending themselves like bows, rolling like bowls, and hanging by the hands, feet, and teeth, according to the different fancies prompted by their capricious imaginations. In short, such is their agility, that they can fling themselves from one rope to another, at thirty, forty, or even fifty feet distance.

These are the habitudes and powers of the smaller class of these extraordinary animals; but we are presented with a very different picture in those of a larger stature, and more muscular form. Those we have yet described, which are seldom found above four feet high, seem to partake of the nature of dwarfs among the human species, being gentle, assiduous, and playful, and rather calculated to amuse than to alarm: but the gigantic race of Ourang Outangs, seen and described by some travellers, is truly formidable; and, in those gloomy forests where they are usually found, they seem to hold an undisputed empire. Many of these exceed the human race in stature; are possessed of superior activity, strength, and intrepidity; and appear to be cunning, lascivious, and cruel. These formidable rivals of mankind are found in many parts of Africa, as well as in the East Indies, Madagascar, Borneo, and some other tropical islands. In Borneo, in particular, the nobility course them as we do stags; and this kind of hunting is said to be the favourite amusement of the king and royal family. Their skins are all hairy; their eyes sunk in their heads; their countenances stern; their faces tanned; and all their lineaments, though exactly resembling those of mankind, are harsh, and darkened by the sun.

In the sultry and desert regions of Africa, the Ourang Outang is still more formidable. Battel gives it the appellation of the pongo; and assures us that, in all respects, it resembles a man, except in its superior magnitude. Its face is almost entirely human; the eyes are deep sunk in the head; and the hair on each side of the visage is extremely long, though the face itself is naked, and without hair, as well as the ears and hands. The body is lightly covered, and scarcely differing from that of a man; but the creature has no calves to its legs, though it walks erect. It sleeps under shady trees; and erects itself a hut, as well to protect it from the ardent heat of the sun, as the violence of the tropical rains: it subsists entirely on fruits, and is in no respect carnivorous. It is possessed of greater instinct than any other animal of the brute creation; and, when the negroes make fires in the woods, has so little timidity, that it generally approaches to warm itself: but it does not appear to have sufficient skill to keep the flame alive by throwing on fresh supplies of fuel. It is a gregarious animal; and, if it meets any of the human species alone, seldom shews them any mercy: it will even attack the elephant, beating it with clubs, and compelling it to retire from that quarter of the forest which it claims as its own. No human art can avail to catch one of these dreadful creatures alive: for they are so strong, that ten men would hardly be a match for one of them; and so fleet, that it is impossible to overtake them. None of this kind, therefore, are ever caught, unless when very young, and the female chancs to leave them behind; and this happens but seldom, as they generally keep clung to the breast, adhering both with their legs and arms. The same traveller also says, that when one of these animals dies, the rest cover the body with a quantity of leaves and branches.

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From another traveller, the ingenious Le Brosse, we learn that these animals often attempt to surprize the female negroes in the woods, where they forcibly detain them for the pleasure of their society, feeding them with the choicest fruits they can procure; and he assures us that he knew a woman of Loango, who had lived among these animals for three years. They grow from six to seven feet in height, and are endowed with prodigious strength. They build sheds for their shelter, and make use of clubs for their defence. Their faces are broad, their noses flat, their ears destitute of lips, their skins brighter than a Mulatto's, and they are covered on many parts of the body with long tawny hair: their bellies are large and prominent; their heels flat, yet rising behind; and they generally walk upright, though they can go on all-fours with equal facility.

From this view of the Ourang Outang, we may perceive at what an infinite distance the first animal of the brute creation is placed from the very lowest orders of the human species! Even among the most savage nations, it is considered as a mere beast; and, in those very places where we might suppose there is the smallest real difference, the inhabitants regard it with the utmost contempt and detestation. In Borneo, where this animal has been said to arrive at the greatest perfection, and to display the highest degree of imitative excellence, the natives hunt it in the same manner as they pursue the elephant or the lion, its near affinity to the human form procuring it neither pity nor protection.

The gradations of Nature in the other parts of her works are minute and imperceptible: in the transition from quadrupeds to fishes, we can scarcely tell where the quadruped ends and the fish begins; in the descent from beasts to insects, we can hardly distinguish the steps of the progression; but, in the ascent from brutes to men, the line is strongly drawn, well marked, and decisive. In vain the Ourang Outang may resemble man in form, or may possess the power of imitating his actions; it still continues a wretched, helpless creature, pent up in the most gloomy parts of the forest; and, with regard to any provident provision for its own accommodation or happiness, it appears greatly inferior to the elephant, or beaver, in sagacity. To unenquiring mankind, indeed, this animal may appear much wiser than it really is. Accustomed to estimate the sagacity of all actions by their similitude to our own, regardless of their aptitude to the animal's way of life, we are charmed with the humble imitations of the Ape, even while we are convinced by our senses that they are far from contributing to the felicity of its situation. An Ape, or a quadruped, when under the trammels of human education, may be an admirable object for our curiosity; but the creature is very little profited, by all its learning, in the advancement of its own felicity: on the contrary, it has been always remarked, that these long-tutored animals have a melancholy in their air, sufficiently expressive of the wretchedness of their situation, and which indicates the solicitude of their minds. The marks of seeming sagacity are merely relative to us, and not to the animal itself; and all its boasted wisdom is entirely the effect of our own tuition.

Another circumstance relative to this animal ought not to be disregarded: there is great reason to believe that the most perfect of the kind, like the rest of the quadruped creation, only owe their erect attitude to human education. Almost all the travellers who mention them, speak of their going on all-

fours;

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fours; though, as their chief residence is among trees, they are without doubt seen erect while climbing; but it appears highly probable that, when they employ every effort to escape, they make use of the united aids of their hands and feet. Schoufer, who mentions their education, tells us that they are caught in traps, and taught at first to walk on their hind-legs; which certainly implies his opinion to be, that they walk on all-fours in their natural state: and, on examining the palms of their hands, and the soles of their feet, we find both equally callous and beaten, an incontestible proof that both have been equally used. In those fervid climes which give birth to the Ape tribes, the feet of the negroes are covered with a skin above an inch thick, while their hands are as soft as those of Europeans; and, if the Apes walked in the same manner, they would doubtless have been furnished with similar advantages. Besides these analogical conclusions, we have the authority of some very respectable travellers in their support: who inform us, that these animals run on all-fours in the woods; and that, when they are taken, their hands are tied behind them, to teach them to walk erect. This attitude becoming in some measure natural to them, after a proper period of instruction, they are sent into Europe, thus trained, to astonish speculative philosophers with their near approaches to humanity; little or no regard being in general paid to the discrimination of what is natural in the animals, and what they have acquired in the savage schools of Angola and Benin.

APE, PIGMY. This animal has a flattish face, with ears strongly resembling those of the human species. The body is about the size of a cat's; the colour of the hair being an olive brown, with a yellowish tinge beneath. These animals are gregarious, and feed on fruits and insects; particularly ants, of which they are so remarkably fond, that they turn over every stone in search of them. When attacked by wild beasts, they betake themselves to flight; and, if they happen to be overtaken, boldly face their pursuers, flinging the subtle sand of the desert in their eyes, so as often to effect their escape. They inhabit Africa; and are frequently exhibited among our collections of foreign animals: they are docile, and of a gentle disposition, and appear to be the Pigmies of antiquity. In Æthiopia, one seat of that imaginary nation, they are extremely numerous. The ancients had many ridiculous legends respecting these Pigmies; whom they described as a people residing near the fountains of the Nile, and represented as annually levying war against the cranes; (that is, to steal their eggs;) and hence the fiction of their combats. None of the ancients, however, have ventured to assert, as from their own knowledge, that such a nation ever existed: Strabo judiciously remarks, that the account of them rests solely on report; and Aristotle speaks of them only by hearsay, when he informs us, that they rode on goats, rams, and even birds of no very considerable size. The Indians, taking advantage of vulgar credulity, sometimes embalmed this species of Ape, and sold them as real Pigmies; and of this kind, unquestionably, were the diminutive mortals mentioned by Grose, which he tells us were found in the forests of the Carnatic.

APE, LONG-ARMED. This animal, to which Buffon gives the name of the gibbon, is a very extraordinary and remarkable creature. It is of different sizes, being from two to four feet in stature. Its face, which resembles that of a man, has

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a circle of bushy hair all round; its eyes are large, and are sunk in their sockets; its features are much tanned; and its ears are well-proportioned. It walks erect, and is destitute of a tail; the nails on the fingers are flat, those on the toes being remarkably long. But it chiefly differs from all others of the Ape tribes in the extraordinary length of its arms, which are long enough to reach the ground when the animal stands erect; so that it can walk on all-fours, and at the same time preserve its upright posture. This animal, next to the ourang outang, has the strongest resemblance to mankind, not only in its figure and conformation, but in its docility and gentleness of manners.

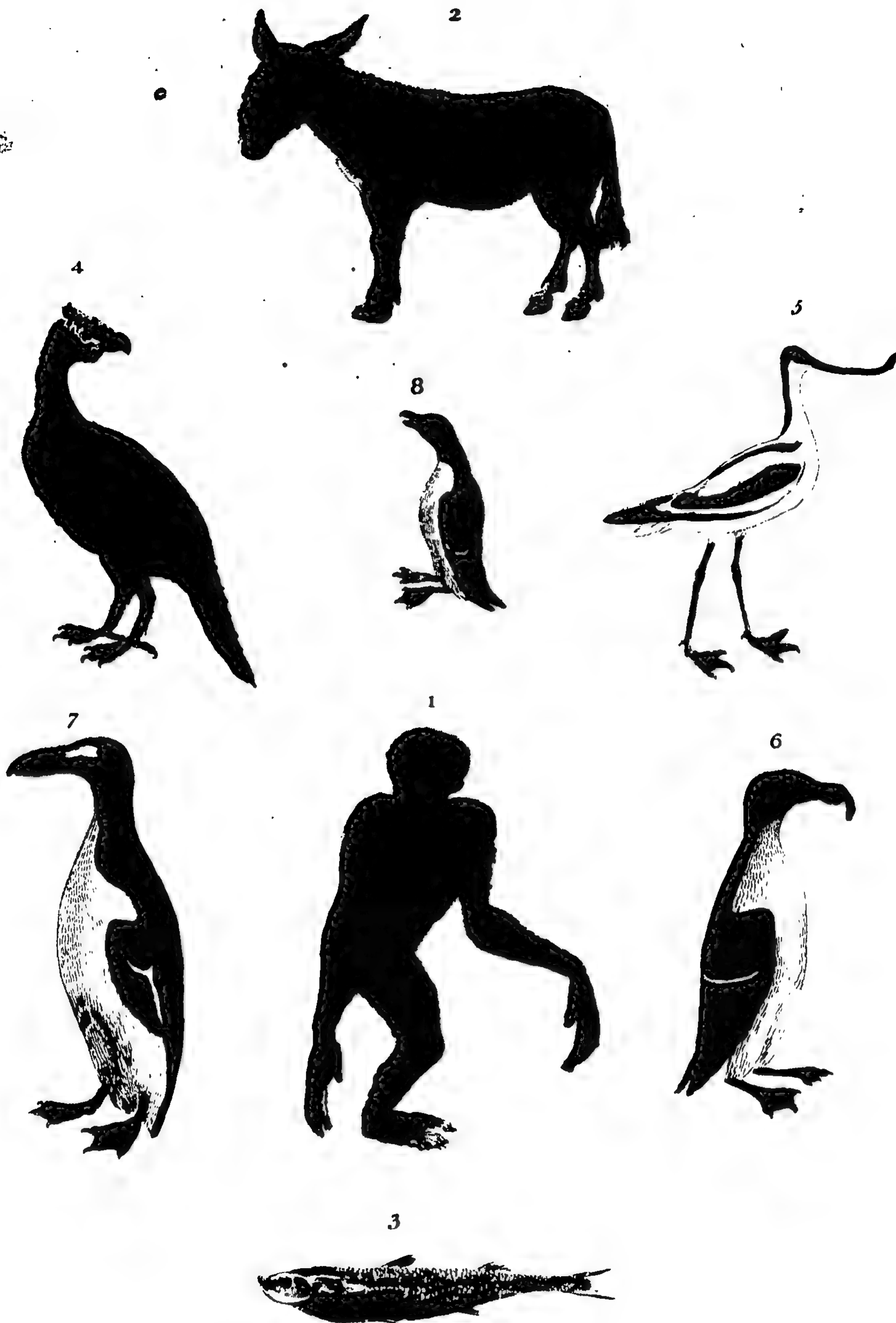
The Long-Armed Ape, of which there is a greater and a lesser species, is a native of the East Indies, and particularly found along the coast of Coromandel. In the forests of Devat, in the interior parts of Bengal, it grows to the height of a man, and is there called jolok. It is also found in Malacca, the Molucca isles, and in Sumatra; where hundreds may be seen together on the tops of the trees.

The great black Ape of Mangsi, a province of China, and mentioned by Du Halde, is probably of this species. Sir Ashton Lever has a specimen in excellent preservation; the body of which is covered with very long soft hair, and the hands reach quite to the ground. The height of the animal is three feet.

APE, BARBARY. This species, which Buffon distinguishes by the name of the magot, is wholly destitute of a tail, though it has a small protuberance on its large, red, and callous rump. The face is peculiarly prominent, and far more like that of a quadruped than of a man. The body is covered with a dirty greenish brown hair, that on the belly being of a dull pale yellow. It has flat nails, ears like the human race, and bare buttocks. It generally grows to about four feet in height; and inhabits many parts of India and Arabia; as well as the whole continent of Africa, except Egypt, where none of this kind have ever been discovered. These animals, as they recede from the human form in conformation and figure, appear also very different in their dispositions; being sullen, vicious, and untractable. They are frequently exhibited in Europe; and, by mere force of discipline, are brought to perform several tricks: but they are naturally unamiable in all their manners. In the open country of Indostan, they sometimes assemble in great numbers; and they often attack the women going to market, and rob them of their provisions. The females of this species carry their young in their arms; and, though thus encumbered, leap with surprizing agility from tree to tree.

Some savage nations regarding these animals as their principal divinities, have erected the most magnificent temples to their honour; and when the Portuguese plundered a religious structure of this kind in Ceylon, they are said to have found the tooth of an Ape in a small golden casket, which was held by the natives in such extraordinary veneration, that they offered 700,000 ducats for its redemption: but the equally superstitious viceroy refused this advantageous offer for his country; insisting that it should be burnt, in order to check the progress of idolatry.

APE, TUFTED. The head of this animal is fourteen inches long; the face being blueish and naked, and the nose of a deep red colour. The eye-brows are black, and the ears are formed like those organs in



1. LONG-ARMED APE. 2. COMMON ASS. 3. ATHERINE. 4. ATTAGEN. 5. AVOSET.

6. COMMON AUK, or RAZOR BILL. 7. GREAT AUK. 8. LITTLE AUK.

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in mankind. It has a long upright tuft of hair on the crown of its head, another under its chin, and two long tusks in the upper-jaw. The fore-feet resemble human hands, but the nails on the fingers are flat. The fore-part of the body, and the inside of the legs and arms, are quite naked: the other parts are covered with mottled brown and olive-coloured hair, that on the back being dusky, and the buttocks are red and bare. The length of the whole animal, in Sir Ashton Lever's Museum, falls something short of three feet six inches. It has a most savage and disgusting appearance, and is peculiarly fierce and salacious. Though it usually goes on all-fours, it will sometimes sit on its rump, and support itself with a stick: in this attitude, it holds a cup in its hand, out of which it drinks with facility. This animal, like the rest of the Ape tribe, chiefly subsists on fruits, and has apparently no carnivorous appetites.

APE HOG. This animal, to which Aristotle gives the name of *simia porcaria*, is a species of which moderns have no perfect knowledge. Buffon imagines it to be the baboon; but, as Aristotle expressly describes Apes as having no tails, and enumerates this as one of the genus, we cannot subscribe to the opinion of this celebrated naturalist. In the British Museum, there is a drawing of an Ape, with a nose exactly resembling that of a hog, which may perhaps be intended for the animal mentioned by Aristotle; but the painting is unaccompanied by any account which might enable us to trace its history.

APE, SEA. Mr. Stellar, in his History of Kamtschatka, describes a very singular animal which he saw on the coast of America, and to which he gives the name of the Sea Ape. Its head resembled that of a dog; its ears being short and erect; its eyes large; and its lips covered with a sort of beard. The length of its body was about five feet, and its form was thick and round; being largest near the head, and tapering to the tail, which had two prongs. The body was covered with thick hair, grey on the back, and red on the belly; but our author could neither discover feet nor paws. It appeared extremely frolicsome, and diverted itself with a variety of tricks; sometimes swimming on the one side of the ship, and sometimes on the other, and apparently observing it with great amazement. It frequently approached so near the vessel, that it might have been reached with a pole; but, on the smallest motion of the sailors, it immediately retired. Sometimes it would raise itself so as to have at least a third part of its body out of water, and continue erect for a considerable time; then, suddenly darting under the ship, instantly appeared on the other side exactly in the same attitude: and this frolic it repeated for thirty or forty times successively; sometimes bringing up sea-plants, wantonly tossing them about, and catching them again in its mouth, with a number of other fantastic tricks.

APER. A sea fish, called by some *strivale* and *riondo*. It approaches very much in shape to the *faber* or *doree*, but is considerably smaller.

APER. The classical name for the boar.

APER MOSCHIFEROUS. A name by which some naturalists have distinguished the *tajacu* of America.

APEREA. A small American animal of the rabbit kind, apparently of a mixed nature between the rabbit and the mouse; having exactly the short round ears of the mouse kind, but all the other pro-

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perties of the rabbit. It therefore obtains the name of the Brazilian rabbit, and generally grows to about a foot in length. Its upper-lip is divided; its ears are short; it has four toes on the fore-feet, and three on the hind; and is destitute of a tail. The colour of the upper part of the body is black, mottled with tawny; and its throat and belly are white. It is a native of Brazil, where it lives in the holes of rocks; and, being forced from its shelter, is hunted by dogs. Its flesh is superior in goodness to that of the European rabbit; and it resembles the hare in its paces.

APER PISCIS. An appellation which some authors have given to the sea-fish, more usually called the *capricus*.

APHIS. The name of a genus of insects, called also *pediculus arboreus*, or the wood-louse, belonging to the *hemiptera insecta* of Linnæus, and of which that great naturalist has enumerated sixteen different species; namely, that of the currant-bush, of the elm-tree, of the elder, of the maple, of the lime-tree, of the birch, of the pine, of the rose, of the parsnip, of the dock, of the *carduus benedictus*, of the mugwort, of saw-wort, of chick-weed, of the lily, and of the cabbage.

The species, however, are certainly more numerous; but they are all denominated from the trees, bushes, or plants, on which they are respectively found. According to the observation of an ingenious naturalist, the Aphides are at one time of the year viviparous, and at another oviparous. Those of the rose-tree have been particularly remarked; and, of ten generations, which regularly succeeded each other in the course of one spring, summer, and autumn, the first proceeded from eggs laid during the preceding autumn; the eight following were all produced viviparous, and consisted entirely of females, of which gender, likewise, was the first brood; and, in the tenth generation, which appeared rather earlier than the middle of September, a few male insects were discovered: these last arrive at their full growth in three weeks; and, having intercourse with the females, those eggs are soon laid which become hatched in the spring. As these insects differ more in colour and size, than in any peculiar habits or conformation, it will be sufficient to give a description of one species, the Aphis of the currant-bush, from which the figure of the rest may be easily conceived. This creature is about the size of a common louse, and of a brownish green colour. The legs are green; the joints of the knees, which commonly project above the body, are brown; the feelers, which are straight and slender, contain a joint near the head, where they are somewhat bent, and exhibit a darkish appearance. The hinder part of the breast is blackish; the sides of the body are variegated with small black spots; and the wings, which are erect, are whitish, except only that they have a few black veins, and two of them are extremely minute. The vent is prominent, and furnished with two bristly appendages considerably shorter than the wings.

APHRODITA. A genus of sea insects, called by Columna the *puendum regale*; by Bartholinus, *vernis aureus*; and by others, *mus marinus*, or the sea-mouse. The general characteristics are, that its figure is oval and aculeated, having a number of fasciculi on each side, supplying the place of feet; its mouth is cylindric, retractile, and placed at the extremity; and it is furnished with two cerateous feelers. It is one of the *gymnarthrodia*, or insects with naked bodies; and belongs to the

order of molucca, in the Linnæan arrangement of worms. There are several distinct species, considerably varying from one another, found on the coasts of the British isles, which Pennant has distinguished by the names of the aculeated; scaled; pedunculated; annulated; and little.

The *Aphrodita Aculeata* is clothed with short brown fur on the back; the sides are covered with green hairs; of a very beautiful hue; mixed with sharp spines; and the skin of the belly is bare. The feet are composed of a fasciculus of five or six strong spines, which grow to the length of five or six inches; and of which there are about thirty-six on each side.

The *Aphrodita Squammata* has the back covered with two rows of large deciduous scales; and is somewhat more than an inch in length.

The *Aphrodita Pedunculata* is distinguished by having two rows of scales on the back, placed alternately; the mouth is cylindric and projecting; and the animal is about an inch long.

The *Aphrodita Annulata* is of an oblong figure, annulated and smooth, except that a row of small spines, one on each annulation, run along the back; it's feet are small; it's length is about two inches and a quarter; and it's colour is a pale yellow.

The *Aphrodita Minuta* is distinguished by the minuteness of it's scales, and the slenderness of it's form. It's length is somewhat less than an inch.

APHUA COBITES. A name sometimes applied to express the fish called in England the sea-loach; which is frequently caught in the Mediterranean seas, and never exceeds three or four inches in length. It's body is round, with a little depression on the back; and it's colour white, with a variation of black spots disseminated over the whole.

APIARIA. A fly which makes it's appearance only in autumn, and is commonly found on parsley. It is a species of the attelabus; and is furnished with two wings of a deep shining black. It collects wax on it's thighs after the manner of bees, from which circumstance it receives it's name.

APIASTER. A name by which some naturalists express the bee-eater, more generally known by the appellation of merops.

APIS, or APES. A genus of four-winged insects; their wings being entirely membranaceous, and their tails furnished with stings. This genus comprehends the bee, wasp, hornet, and humble bee.

APIVORUS BUTEO. A title by which some authors express the bird usually known in England by the name of the honey-buzzard. It is a little larger than the common buzzard; it's beak is black, aduncated, protuberant in the middle, and covered down to the nostrils with a black wrinkled skin; and it's mouth opens very wide, having internally a yellowish hue. This bird either builds itself a nest of sticks covered with wool, or occupies the deserted habitation of a kite for the purpose of breeding it's young; which it principally feeds with the nymphs or magot-worms of bees and wasps, and pieces of honey-combs are frequently found in the nest; itself feeding on newts, frogs, and other small animals. It is remarkable for running swiftly on the ground; and the female is distinguished from the male by being larger, a common mark of discrimination in birds of prey.

APODES. A title of Greek derivation applied by zoologists to signify a fabulous kind of birds, said to exist in some of the oriental islands, and which, being entirely destitute of feet, support

themselves on the branches of trees by their crooked bills. The Dutch and Germans have also their *Apodes*, a species of birds resembling the common swallow; with legs and feet so extremely minute, as to be rather adapted for creeping than running.

APODES. One of the four orders of fishes, in the Linnæan system, comprehending eight genera, and twenty species. Their distinguishing characteristic is, that they are destitute of ventral fins.

APPLE FLY. A name usually applied to express a small green fly found sometimes on the rind of an apple, and hatched by a worm, or maggot, which infests that fruit.

APTERA. A classical name derived from the Greek, and used to denote that order of insects which have no wings. In the Linnæan system of arrangement, they form the seventh order in the class of insects, comprehending fourteen genera, and two hundred and ninety-seven species. Hill subdivides this series into two classes; namely, such as have neither wings nor legs, to which he gives the appellation of *Aptera anarthra*; and such as have legs but no wings, which he calls *Aptera podaria*.

APUA. The name of a small fish; which some naturalists have fancifully supposed is generated by the mud and slime on the shores; but such absurd conjectures as these require no confutation. There are two species of this fish; the *Apua Vera*, and the *Apua Phalerica*.

APUA MEMPRES. A name by which some denote the common pilchard.

ARACARI. The name of a Brazilian bird, of the woodpecker kind. It's size is equal to that of the common green woodpecker; and it has a bill four inches long, an inch and a half broad or deep, and three inches and a half round in the thickest part, which bends downward, and is sharp-pointed like a parrot's. The upper mandible is larger and longer than the lower one; and both are deeply serrated above half way from the end. The bill is hollow, and as light as sponge; the upper mandible being white, distinguished by a black line running along the middle or ridge from head to point, and the lower one wholly black. The bill has a triangular form at it's insertion into the head, where it is surrounded with a white line. It's tongue, which is four inches long, is black, and has the appearance of being feathered. It's head, which is not very large, is broad, and compressed; it's eyes are big, and have black pupils, with yellow irides; and the neck is not longer than a parrot's. The body, from the rise of the neck to the tail, is about five inches long; the tail, which is broad like the woodpecker's, is at least six; the thighs are two inches, and the legs one inch and a half. The legs and feet, like those of parrots, are black or dark green, having two fore-toes, one longer than the other; and two back-toes, likewise of unequal lengths. The claws are crooked, and of a dusky or black colour. The breast, and whole lower belly of this bird, are elegantly clothed with yellow feathers, mingled with pavonine; and, across the breast, from one side to the other, there is a broad red line. The back, wings, tail, and thighs, are covered with blackish green feathers, like those on the common magpye; and the end of the back, above the beginning of the tail, is a deep red for a considerable length. The wings, which terminate at the rise of the tail, are lined with a dark ash-colour; and the inside of the bill is black. This bird has an odd cry, in which it nearly pronounces it's own name, 'Aracari!'

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Aracani. It considerably resembles the toucan, or Brazilian pye; and, from the conformation of its feet, seems evidently of the woodpecker kind.

ARACHNOIDES. The name of one of the genera of the echini marini: the distinguishing characters of which are, that it is of a circular form, but variously indented at the edges; the mouth is round, and placed at the centre of the base; and the aperture for the anus is quadrangular, and situated in one of the sides on the superior superficies, but near the edge.

ARANEA. A genus of the aptera insects, in the Linnæan system. See SPIDER.

ARANEA CONCHA. The name of a genus of sea-shell, of which there are several species; usually distinguished in England by the name of spider-shells. They belong to the family of murex, and their peculiar character is the having digitated lips. The several species have different numbers of fingers, from the lip of the shell, as four, five, six, seven, and eight.

ARANEUS MARINUS. The sea-spider; a name by which some naturalists have expressed the fish more usually called draco marinus, which is supposed to contain some venomous qualities in the spines of its dorsal bone.

ARARAUNA. A name given by Marcgrave to a Brazilian bird of the macaw kind, but of a different colour. The bill is black, and the eyes are a fine sky blue, with black pupils: the skin round the eyes is marked with black and white spots; and the legs and feet are brown. On the fore-part of the head is a kind of cap, consisting of fine green plumage; and, under the throat, a circle of black feathers. The sides of the neck, the breast, and the lower part of the belly, are yellow: but the hinder part of the head, as well as the neck, back, and wings, are all blue; except that the extremity of the latter is mixed with yellow. The tail is beautifully intermixed with long blue and yellow feathers, but in general all the external blue feathers are internally black.

ARCÆ, or ARKS. A family of shells of the bivalve kind, sometimes called boats, having their hinges on a perfect straight line, and being of a somewhat squarish figure, or rather oblong, like the Noah's Arks and square cockles.

Conchologists assign different ranks to the Arks: Lister inserts them among the multarticulate cockles; placing the Noah's Arks among the muscles, as many-toothed muscles. Woodward ranks them among his polyginglymi forma oblonga; Argenville places them in his fourth family, or that of heart-cockles; Davila makes them a distinct genus of his fourth family, or heart-cockles, and gives them the name of Arks; and Linnæus ranks them as a distinct genus, and calls them Arca. This family, however, contains but a very few species.

ARCHITALASSUS. A name given by some authors to that beautiful and precious shell called by us the admiral.

ARCTIC BIRD, AMERICAN. This bird is somewhat larger than a tame pigeon, and has a bill compressed sideways, hooked at the point, with a nail at the extremity, which is separated from the other part by a cross furrow. The top of the head is blackish, and the sides of the head, the throat, neck, breast, and belly, are white; but the legs and lower-belly are cinereous. The lower part of the neck behind, as well as the whole back, wings, and tail, are likewise of a dark cinereous colour. The tail-feathers are shortest on the sides, and gradually in-

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crease in length to the two centre ones; which are very considerably longer, and resemble those of a man-of-war bird. The legs, which appear weak, are bare of feathers above the knees, and of a bright yellow colour. The feet are black, and the three forward toes are webbed like those of a duck. This bird is a native of Hudson's Bay; and Edwards considers it as a distinct species.

ARDEA. A genus of the order of grallæ, belonging to the class of aves, in the Linnæan system: its distinguishing characters are, that the beak is straight, acute, long, and compressed; a sulcus or furrow passing from the nostrils, which are linear, to the apex; and the feet are furnished with four toes. Linnæus enumerates twenty-six species of this genus.

ARDEOLA. A very beautiful Brazilian bird of the heron kind, but not larger than a pigeon.

ARENARIA. A bird usually known in England by the name of the sanderling, and in some places, particularly in Cornwall, by that of the cur-willet. It is a water-bird of the long-legged, open-footed kind, and is a size larger than the tringa minor, or sand-piper. This species frequents the seashore, and flies about in large flocks.

ARGENT AND SABLE. A very curious white moth beautifully chequered and spotted with black; the expansion of the wings being about an inch and a half. The caterpillar feeds on white-thorn, and changes to a chrysalis about the first week in May; but both the caterpillar and chrysalis are so exceedingly scarce, that the most inquisitive aurelian has never been able to discover either of them; and, indeed, the moth itself is seldom seen in this country. It seems to be a native of the woods, or lanes, where it is sometimes caught about the beginning of June. In some particular seasons this admired insect is found in great plenty, and seems to breed with amazing fecundity; but then the species again become extremely scarce, and several years elapse before they are again seen in any numbers.

ARGENTINA. The name of a genus of fish of the malacopterigious kind; and, in the Linnæan system, of the order of abdominales; the characters of which, according to Artedi's definition, are these: the body is oblong and cylindric; and the teeth are placed on the tongue and palate. There appears, however, from the same author, to be only one species of this genus, which is furnished with large eyes, and a bifid tail, and is caught on several of the Italian shores. Ray describes the Argentina to be a small fish of the larengiform kind, caught in the Mediterranean, and common in the markets of Rome. This fish, which has sometimes been caught on the British coast, is about three inches long; the eyes are large, and the irides silvery. The lower-jaw has a considerable slope; the teeth are very small; the body is compressed, and almost of an equal depth to the anal fin; and the tail is forked. The back is of a dusky green colour; and the sides and coverts of the gills appear as if overlaid with silver. On each side of the belly is a row of circular punctures; and above them there is another which terminates near the vent.

ARGONAUTA. A genus of worms of the testacea order; the animal of which is a sepia; and the shell is univalve, spiral, membranaceous, and single-celled. There are only two species of this genus.

ARGUS. An animal of Iceland, remarkable for its number of eyes, and in that country called ofscabicorn.

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of cabicorn. It appears to be of the testaceous kind; of an oblong form, resembling a crab's tail, and about an inch and a half in length.

ARINGA. A name applied by several naturalists to the herring.

ARMADILLO. The name of an animal somewhat approaching to the hedge-hog kind, called by Latin authors the *echinus Braziliensis*; and, by Linnaeus, *dasypus cingulis novem, palmis tetradactylis plantis pentadactylis*.

Nature presents us with several species of this genus; all of which, after a general history of the kind, it will be proper to describe.

The Armadillo, which is an inhabitant of South America, is a peaceful harmless creature, incapable of injuring any other quadruped, and furnished with a peculiar covering for its own defence. Possessed of no power of repelling external assaults, the Armadillo is obliged to submit to every insult; it is attacked without danger, and consequently liable to various persecutions.

The Armadillo is covered, like a tortoise, with a shell, or rather a number of shells, which prevent its true proportions from being immediately discerned. At first view, it appears a round, misshapen mass; with a long head, and a very large tail, sticking out at either end, as if unconnected with the rest of the body. It is of different sizes, from one to three feet long; and covered with a shell, divided into several pieces, and folding over each other, like the tail of a lobster. The difference in the size of this animal, and also the different dispositions, as well as the numbers of its plates, have been generally considered as constituting so many distinct species, to which suitable names are given. In all, however, the animal is clothed with this partial coat of mail; the conformation of which affords one of the greatest curiosities in the ample field of nature.

This shell, which in every respect resembles a bony substance, covers the head, the neck, the back, the sides, and the rump, as well as the tail, which is armed to its very extremity. Indeed, the only parts uncovered with this invulnerable mail are the throat, breast, and belly; and even these, which appear covered with a white skin resembling that of a fowl when stripped of its feathers, are in fact clothed with shells in an incipient state, of the same substance as those on the back. The skin, therefore, in the softest parts, seems to have a strong tendency to ossification; but a complete ossification takes place only on those parts which have the smallest degree of friction, and are the most exposed to external injuries. The shell which covers the upper part of the body differs from that of the tortoise, being composed of more parts than one, which lie in bands over the body; and, as in the tail of the lobster, slide over each other, being connected by a yellow membrane. This gives the animal a motion in its back, and accommodates the armour to every necessary inflexion. The bands are of various numbers and proportions: in general, however, there are two large pieces, one covering the shoulders, and the other the rump. Between these, on the back, the bands are placed in different numbers, which fold over each other, and communicate motion to the whole. Besides their opening across, they also open straight along the back, so that the animal is enabled to move in all directions. In one species there are three of these bands; in another, six; in a third, eight; in a fourth, nine; in a fifth, twelve; and, in a sixth, eighteen. The

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shells are variously coloured in different kinds, but usually they are of a dirty grey, or rather sand-colour: and these hues, in all of them, arise from another peculiar circumstance in their conformation; the shell itself being covered with a softish skin, which is smooth and transparent.

But though these shells may well defend the animal from a feeble enemy, they can make but a slight resistance against any powerful opponent: nature has, therefore, given the Armadillo the same means of protecting itself as that with which it has endued the hedge-hog and the pangolin; for, the instant it perceives itself attacked, it withdraws its head under its shells, leaving no part visible but the tip of its nose; and, if the danger increases, the animal's precautions being exerted in proportion, it tucks up its feet under its belly, unites its two extremities together, the tail appearing like a band to strengthen the connection; and, thus rolled up, becomes a sort of ball somewhat flattened on each side. In this condition it remains till its fears have wholly subsided; and it is often tossed about at the pleasure of other animals, having little or no appearance of life or motion. Whenever the Indians catch it, which is always in this form, they lay it close to the fire, till the poor animal is obliged to expand itself, and thus submits to its fate.

Before the discovery of America, the Armadillo was entirely unknown; nor does the old world appear to contain a single species of these extraordinary creatures. They are extremely mild and inoffensive; unless by accident they find their way into a garden, where they destroy the choicest fruits and vegetable productions. Though they are natives of the warmest parts of America, they bear the severity of colder climates without any apparent injury, and are often exhibited among our collections of wild beasts. Their motion seems to be a quick walk, but they can neither run, leap, nor climb up trees; so that if they are once found in an open place, they have no possible means of escaping. In this extremity, they commonly make towards their holes as fast as possible; or, that being impracticable, dig a new hole before the enemy arrives. For the performance of this business a few moments are generally sufficient, as they burrow with all the expedition of a mole; being furnished with claws, extremely large, strong, and crooked, and usually four on each foot. They are sometimes caught by the tail, as they are making their way into the earth; but such is their resistance, and so difficult is it to draw them back, that if any great force is exerted, they readily leave their tails in the hands of their enemies. The pursuers, sensible of this, seldom pull their tails violently, but only hold them while another digs the surrounding earth, and then the animals are caught alive. The instant the Armadillo perceives itself in the power of its enemies, its last resource is to roll itself up, and thus patiently wait whatever tortures the cruel captor thinks proper to inflict. The flesh of the smaller species is said to be very delicate food, so that we may naturally suppose they receive little mercy: they are, indeed, pursued with unceasing industry; and, though they burrow very deep in the earth, many expedients have been adopted to force them out; sometimes by contriving to fill the hole with smoke, and at others by overwhelming them with a deluge of water. A small species of dogs are also bred to the chase of these animals, which quickly overtake them, if they happen to be at any distance from their burrows, and oblige them to roll themselves

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selves into a ball, when they are immediately picked up. If, however, they be near a precipice, they often escape by rolling themselves up, and devolving from rock to rock; and this they can do without the smallest degree of danger or inconvenience. They are sometimes caught in snares placed by the sides of rivers, and low moist grounds, which they generally frequent; and this mode commonly succeeds better than either of the former, as their burrows are very deep, and they seldom quit them till night. Indeed, they never venture far from their retreats, so that it requires both patience and skill to intercept them on their way.

Almost every species turn up the ground like the hog in search of roots, which constitute a principal part of their food: they live also on melons, and other succulent vegetables, and will eat flesh when they can procure it. They likewise prey on worms, small fish, and water-insects.

In the larger species, the shell is much more solid than in the small ones, and the flesh harder and more unfavoury. Those, too, generally reside in dry upland grounds; while the small species are always found in moist places, and in the vicinity of brooks and rivers. Though all roll themselves up into balls, those which are furnished with the smallest number of bands find the greatest difficulty in doing this compleatly. The Tatu Apará, or Six-banded Armadillo, for instance, when rolled up, presents two great interstices between it's bands, where it is easily vulnerable, and of course liable to external injury from the meanest quadruped.

Between this animal and the rattle-snake the closest friendship is said to subsist; and they are reported to live peaceably and commodiously together, being often tenants of the same subterraneous retreat. This, however, may probably be a friendship of necessity; the rattle-snake taking possession of the Armadillo's hole, which neither is willing to quit while there is an impossibility of their injuring one another.

The plates of the Armadillo's shell, powdered, and administered in doses of a drachm, are esteemed sudorific; and, as some assert, constitute a powerful remedy for the lues venerea.

ARMADILLO, THREE-BANDED, or the **TATU APARÁ**, has short broad rounded ears; and the crust on the head, back, and rump, is divided into elegant pentangular tuberculated segments. In the middle are three bands; on each foot five toes; and the tail is extremely short, being no more than two inches long, though the shell, taking all the pieces together, is eighteen inches broad. This animal grows extremely fat; and, when young, is esteemed delicious food: but, with age, it acquires a rank, musky taste, which renders it's flesh absolutely nauseous. It breeds every month, and brings forth four at a time.

ARMADILLO, SIX-BANDED, or the **ENCORIBERT** of Buffon, is distinguished by having six bands across the back; between which, and also on the neck and belly, are a few scattered hairs. The crust on the head, shoulders, and rump, is formed of angular pieces; the tail being very thick at the base, and tapering to a point; and there are five toes on each foot. This species inhabits Brazil and Guiana.

ARMADILLO, EIGHT-BANDED, or the **TATUETTE**, is furnished with eight bands. It's body, from the nose to the insertion of the tail, is about ten inches long, and the tail is seven. The ears are erect, and

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two inches long; and the eyes are small and black. The fore-feet have four toes, and there are five on the hind ones. It inhabits Brazil; and it's flesh is reckoned the most delicious of the whole genus.

ARMADILLO, NINE-BANDED, or the **CACHICAME** of Buffon, is about two feet long from the nose to the tail. The ears are long; and the crust on the head, shoulders, and rump, is marked with hexangular figures: on the sides are nine bands, distinguished by transverse marks; and the breast and belly are covered with long hairs. The fore-feet have only four toes, but there are five on the hind ones; and the tail, which is long and taper, exceeds the whole body in length. There is a specimen in the Leverian Museum, which agrees with this description, except that the crusts on the head, and other parts of the body, are covered with large scales not angularly formed.

ARMADILLO, TWELVE-BANDED, or the **KABASSOU** of Buffon, is the largest animal of the whole genus. The body is near three feet long, and the tail about eighteen inches. The ears are broad and erect; the crust on the shoulders is marked with oblong pieces, that on the rump being hexangular; on the sides are twelve bands; and all the feet have five toes each. The tail tapers to a point, and there are a few hairs scattered over the body.

Buffon mentions another Armadillo with Twelve Bands, having it's tail covered with rhomboidal figures; from which dissimilarity he seems doubtful whether it ought to be referred to the same species.

ARMADILLO, EIGHTEEN-BANDED, or the **CIRQUEÇON** of Buffon, has a very slender head, with small erect ears; and the crust on the rump and shoulders is composed of quadrangular pieces. The bands on the sides are eighteen in number; and the length of the animal, from the nose to the insertion of the tail, is about fifteen inches. This species likewise inhabits South America.

ARQUATA. The name of a bird called also by some naturalists *cumenius*; and usually known in England by that of the curlew. The flesh of the Arquata is esteemed very delicious. The male is somewhat smaller than the female; and is called the jack-curlew.

ARQUATA MINOR. An appellation which some authors have given to the bird known in England by the name of the wimbrel.

ARRARACANGA. A bird resembling the maccaw. It is about the size of a raven, with a large head, flat and broad on the upper part. The eyes are beautiful, and of a sky-blue colour, with a black pupil; the bill is large and aduncated, being white above, and black underneath; the tongue is like that of a parrot; and the feet and legs, which are black, are also formed in the same manner as the parrot's. The head, neck, breast, belly, and thighs, as well as part of the tail, and the beginning of the wings, are covered with the most brilliant red feathers; but the middle part of the wings is green, and the rest blue. The extremity of the back towards the rump is covered with blue feathers, mixed with some others of a brownish cast; and the tail is about three inches long. The Arraracanga, like the parrot, is capable of being taught to pronounce a few words, and feeds in the same manner.

ARTENNA. A water bird of the size of a hen; of a brownish colour on the back, and white on the belly. It's bill is hooked; and the three fore-toes are connected by a membrane; but the hinder

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one is loose. It is a native of the Island Tremiti, in the Adriatic Sea; and is generally conjectured to be the avis diomedis of antiquity.

ARU, or KARA. A bird of the penguin or hawk kind. It is larger than a duck; it's head, neck, and back, are black; it's bill is long, straight, black, and sharp; it's legs are black, with a cast of red; it has three black toes; and is web-footed. Great numbers of these birds are found on the rocky islands of Kamtschatka. The inhabitants kill them for the sake of their flesh, though tough and ill-tasted; but more for their skins, of which they make themselves garments. The eggs of the Aru are esteemed a great delicacy.

ASCARIDES. A class of worms of a slender filiform body, attenuated at each end; and ranged by Linnæus among the vermes intestinæ. These worms are chiefly found in the intestinum rectum of children; are frequently voided with the fæces; and occasion a perpetual motion in the intestines, and an intolerable itching.

The Ascarides, however, are not so dangerous as many other worms; but, for several reasons, they are more difficult to be expelled: their situation is so remote from the stomach, that medicines generally lose their effects before they can reach them; they are lodged in a viscous humour, which repels and prevents the operation of applications; and they sometimes ascend into the cæcum, where they remain entrenched in perfect security.

Ascarides is also a name used by Reaumur to denote a sort of small worms, or maggots, bred from the eggs of winged animals; and which, burying themselves between the membranes of the leaves of plants, consume the parenchymatous substance.

Small as these Ascarides in general are, they nevertheless exhibit the proper characters by which they may be reduced to regular classes: those which derive their origin from the eggs of butterflies are truly and properly caterpillars in miniature; the maggots from flies form a second class; and the Ascarides of beetles, which change to hexapode worms, a third.

With respect to the minute caterpillars, some are furnished with sixteen feet, while others have only fourteen; some are perfectly smooth and equal all over the body, while others have a number of rings or annular divisions like the larger caterpillar. Their several changes, however, before they arrive at the fly state, are the same with those of the common silk-worm, and other species of large caterpillars. The Ascarides of the parent butterfly are deposited singly, only one being placed on each leaf; for the small caterpillar is of a solitary nature. These eggs are so minute as to be scarcely perceptible; Reaumur, however, not only discovered them lying on the leaves of plants, but also traced them to their time of hatching. This accurate observer took notice that the caterpillar never enjoys the light, or free air: for, as soon as it is hatched, it eats it's way through the integuments of the leaf; and, under the cover of it's shell, buries itself among the parenchymatous matter, from whence it never stirs till it arrives at it's winged state.

The worms hatched from the eggs of flies make their way as speedily into the substance of the leaf as the minute caterpillars: but the latter eat their way through the leaf with their teeth; while the former continue striking their heads forcibly against it till they complete a perforation large enough to admit their whole bodies, when they feed on the parenchyma of the leaf, in the same manner as the cater-

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pillars, till they finally change into their chrysalis state within the covert of the membrane of the leaf.

The last kind of Ascarides, which eventually become beetles, make their way into the substance of the leaf after the same manner as the preceding; and, when they have fed on it's parenchyma and juices throughout their stated time, they sometimes change in the covering of the membrane, and at others come out of their holes, as if preferring the surface of the leaf for that purpose.

ASCHIA. Another name for the grayling.

ASCIDIA. A genus of worms belonging to the mollusca class in the Linnæan system of arrangement, and comprehending six species. The body, which is brown, is fixed to a shell, rock, or some other hard substance; and it is furnished with two apertures; one on the summit, and the other somewhat lower, forming a sheath. The extremities are generally scabrous; the middle part being smooth, and the lower flat. Animals of this genus possess the faculty of squirting out the water they have imbibed.

ASELLUS. The classical name for a genus of fish including the cod and the whiting; and of which naturalists enumerate several species.

ASILUS. A name given by some naturalists to the luteola, or regulus non cristatus; an extremely small bird, which commonly frequents willow-trees.

ASILUS. The classical name of a genus of insects belonging to the diptera of Linnæus, and comprehending seventeen species.

This genus, which comprehends the hornet-fly or wasp-fly, has these characteristics: the insect is bipennated; and has a style, or oblong body, terminated by a protuberance, called a balancer, under each wing: the head is furnished with a snout or beak of a subulated figure, which is very sharp at the extremity.

Some naturalists have bestowed on these insects the appellations of muscæ crabroniformes, muscæ rapaces, and muscæ vespiformes.

ASINUS PISCIS. A name sometimes given to the æglefinus, or common haddock, called also onos.

ASIO. A name by which Aldrovandus, and other naturalists, express the otus, or lesser-horned owl.

ASKER. A provincial appellation for the water-newt, or eft.

ASOTUS. A species of the silurus.

ASP. A species of venomous serpent, the bite of which is said to occasion a speedy, but gentle death; on which account Cleopatra put a period to her existence by the application of these reptiles to her bosom, when victory declared against Mark Anthony at the battle of Actium.

The Asp is frequently mentioned by ancient historians; but their descriptions are so vague and uncertain, that it is difficult to determine what known species may at present be so called. The word is undoubtedly derived from Aspis, a Shield, because the creature lies convolved in a circle, in the centre of which it exerts or raises it's head like the umbo of a buckler.

Some authors describe the Asp as being about the size of a common snake; except that the back is broader, and the neck capable of a vast inflation when the creature is incensed. It's teeth are also said to be exceedingly long, and to stand out of it's mouth like those of a boar; but this we may fairly assert to be fabulous, though mentioned by several naturalists.

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naturalists as a peculiarity of the species. It is probable, however, that two of it's longest teeth are hollow; that the venom emitted by the Asp flows from them; and that they are covered with thin pellicles, which slide downwards when the serpent is disposed to bite. The skin of the Asp is said to be covered with scales, but naturalists are by no means agreed on the colour. Some reckon the Asp two cubits long; other four, or five; and Kolben affirms that he has often seen it several ells in length. From this diversity of opinion, we are not warranted to decide: it is, however, unquestionably a native of Africa, and appears to have been well known to the ancients.

Lord Bacon asserts, that the bite of the Asp is the least painful of all the instruments of death; and supposes it's poison to have some affinity to opium, but to be less disagreeable in it's operation. This, however, does not well accord with the descriptions of the symptoms given by Dioscorides and others; who assert that, immediately after the bite, the sight becomes dim, a sensible tumour arises, and a moderate pain is felt in the stomach. Matthiolus says, that the bite is followed by a stupor of the whole body; with paleness, coldness of the temples, continual yawning, a nictitation of the eye-lids, an inclination of the neck, a heaviness of the head, an irrecoverable sleep, and, lastly, convulsions.

Aristotle informs us, that the bite of the Asp admits of no remedy; and Pliny and Egineta confirm this opinion, in cases where an amputation of the part cannot be effected. Others, however, recommend cicatrizing the wound, together with the internal use of hot alexipharmic medicines.

From some particular parts of this formidable serpent, the ancients made a plaister, of singular efficacy, as a discutient of strumæ, and other indurations; and which was likewise beneficial in arthritic complaints. The flesh and exuviae of this animal were likewise admitted into the ancient materia medica.

ASPIUS. A species of the cyprinus, belonging to the abdominal order of fishes, and commonly found in the lakes of Sweden.

ASS. A well-known quadruped; which, from it's great resemblance to the horse, might naturally enough be supposed to be of the same species, and only somewhat degenerated from that noble animal: the species, however, are perfectly distinct; and there is an inseparable line drawn between them, the animal produced from the mixture of a horse and an ass being barren. This, indeed, seems to be the barrier between every species of animals, which keeps them asunder, and preserves the unities of their forms. If the mule or monster bred between two animals whose forms nearly approach each other, is no longer fertile, we may then conclude that these animals, whatever external similitude may appear between them, are certainly distinct and separate kinds. Nature, which always provides for the perfection and preservation of her productions, has wisely stopped the fecundity of these ill-formed productions, in order to preserve the form of every animal uncontaminated: were not this the case, the different species of animals would soon be blended with each other; no one kind would preserve it's original perfection; every creature would quickly degenerate; and the world would inevitably be over-run with productions alike monstrous and deformed.

The horse and the Ass, though they somewhat

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resemble each other, are nevertheless of two distinct kinds, and very different in their natures, tempers, and habits. Their shapes and manners may, indeed, possess a considerable degree of similarity; but there is something in every animal, besides it's conformation and way of life, which determines it's specific nature. Thus, between the horse and the Ass there is a much stronger resemblance than between the goat and the sheep; and yet the latter produce an animal capable of re-producing an offspring resembling the sheep, while the mule of the former is marked with certain sterility. The goat and the sheep may, therefore, be said to be of one species, though so unlike in figure; while the horse and the Ass are perfectly distinct, notwithstanding they are so nearly allied in conformation. It has, indeed, been asserted by Aristotle, that their males are sometimes prolific; but this assertion has never yet been confirmed by any positive testimony, though a period of near two thousand years has elapsed since it was first advanced. On the contrary, it is an indisputable fact, that the two animals, even in a state of nature, are found to be entirely different. The wild Ass is seen in still greater abundance than the wild horse; and the peculiarities of it's kind are more distinctly marked than in those of the tame one. Were the Ass only a horse degenerated, the likeness would be stronger between them the nearer we approached to the original stock from which both have been supposed to spring. In such a case, the wild animals of both kinds would resemble each other much more than the tame ones, on whom Art has, for a succession of ages, been exerting all her force, in producing foreign habits and alterations. The contrary, however, is apparent: and the wild Ass has not only fewer properties of the horse than that which is bred in a state of domestic servitude; but even discovers a natural aversion to this noble animal.

The wild Ass, or koulán, has by some writers been confounded with the zebra, though it is certainly of a very different species. The wild Ass is not streaked like the zebra, nor is it's shape so beautiful. It's forehead is more arched than in the common breed; it's ears are always erect, sharp-pointed, and lined with whitish curling hairs; the irides are of a livid brown colour; the lips are thick; and the extremity of the nose is extremely sloping down to the upper-lip. It is also much higher than the common Ass, and it's legs are finer; but it resembles that animal in the narrowness of it's chest and body: it carries it's head, however, much higher, and it's skull is amazingly thick and strong. The mane is composed of a soft woolly dusky hair, about three or four inches long, and extends quite to the shoulders; and the hairs at the extremity of the tail are coarse, and about a span long. It's colour in general is a fine silvery white: the superior part of the face, the sides of the neck and body, being of a flaxen hue; the hind-parts of the thighs of the same colour, while the fore-parts are divided from the flank by a white line, which extends round the rump to the tail; the belly and legs are also white; and along the very ridge of the back, from the mane quite to the tail, there runs a stripe of bushy waved hairs of a darkish colour, another of the same hue crossing it at the shoulders of the males, and forming a mark similar to that in the tame or common Ass.

It's winter coat, which is very fine, soft, silky, and much undulated, nearly resembles the hair of
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the camel, being unctuous to the touch; and the flaxen colour, during that season, becomes more exquisitely bright. The head of the male koulan, or wild Ass, is two feet long; from the beginning of the neck to the insertion of the tail, is four feet eleven inches; the tail is about two feet and a half; and the ears are near a foot long. It's height before is upwards of four feet; and, behind, near four feet six inches. Such is the colour and conformation of this animal in a wild state, in which it is often found in many islands of the Archipelago; particularly that of Ceugo; but more frequently in the dry and mountainous parts of Great Tartary. There are also many wild Asses in the deserts of Lybia and Numidia, which run with such amazing celerity, that even the coursers of that country can but seldom overtake them. Whenever they espy their pursuers, they set up a horrid braying; and, stopping short till the nearer approach of their enemies, they fly off with the utmost speed; and, on such occasions, generally fall into traps which have been previously prepared for them. The natives hunt them both for their flesh and their skins: the former they esteem very delicious food; and of the latter they compose that manufacture which is known by the name of shagreen. That part of the hide which is chiefly used for this purpose, grows near the rump of the animal; but it is artificially granulated. In Persia, this manufacture is regarded as of considerable importance; and the natives of that country esteem the bile of the wild Ass a specific against dimness of sight.

Olearius relates, that a Persian monarch once invited him to an entertainment of a very peculiar nature, which was exhibited in a small structure near the palace, constructed in the form of an amphitheatre: after a collation of fruits and sweetmeats, upwards of thirty wild Asses were driven into the area, among whom the monarch discharged several arrows, in which he was imitated by the rest of his attendants. The Asses, perceiving themselves wounded, and unable to escape, instantly began to attack each other, biting with great ferocity, and braying in the most hideous manner: the arrows, however, continuing to be poured in from above, the Asses were all soon dispatched; and, being ordered to be carried off, were conveyed to the king's kitchen at Ispahan.

The Persians so highly esteem the flesh of this animal, that it's delicacy is even become proverbial among them. When fresh killed, it is hot and unfavoury; but, being kept some time after it is boiled, it becomes excellent food. The flesh of the tame Ass, however, is more dry, tough, and disagreeable, than even that of the horse; and, according to Galen, it is very unwholesome.

We should not, however, hastily decide on the different tastes of different people, respecting the preference they give to certain kinds of food. The climate produces very considerable changes in the tenderness and flavour of several viands: beef, for instance, which is so excellent in England, is extremely tough and dry when killed under the line; pork, on the contrary, which with us is, so unpalatable during the summer months, is in the warmer latitudes, the finest eating imaginable, and infinitely superior to any European hog's flesh.

Before the discovery of America, the Ass seems to have been entirely unknown on that continent, though the climate is peculiarly favourable to that race of animals; and where they have been permitted to run wild, they multiply so quick, that in

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some places they are become a nuisance. In the kingdom of Quito, the owners of the ground where they breed suffer any person to take away as many as he can, on paying a small consideration, in proportion to the number of days employed in securing them. On these occasions the following method is adopted.

A number of whites on horseback, attended by Indians on foot, proceed to the spots where the Asses are known to frequent; and, forming a circle, drive them into some valley: when, throwing the noose as they ride at full speed, they endeavour to halter them. The animals, finding themselves inclosed, make very furious efforts to procure their enlargement; and if only a single one forces his way through, the rest follow with irresistible impetuosity. When an Ass is noosed, the hunters throw it down, and secure it with fetters, leaving it in this state while they pursue others: and, the sport being ended, in order to bring away what they have caught with the greater facility, they generally couple them with tame animals of the same species. This, however, is no very easy task; as they are so remarkably fierce that they often wound the persons who undertake to manage them. They are nearly as swift as horses, and neither declivities nor precipices can retard their progress. They defend themselves so actively with their heels and mouths, that they wound their pursuers, even while they continue their flight. But, notwithstanding their wildness, after carrying the first load, their celerity ceases; their dangerous ferocity is no more; and they soon contract that dull aspect which is so peculiar to the asinine species. These animals always feed together; and, if a horse happens to intrude himself into their society, they usually bite and kick him till they leave him dead on the field.

Thus it obviously appears that the Ass is naturally swift, fierce, and formidable; but, when tamed, it presents a very different picture. The moment it's original liberty is lost, it seems to relinquish every claim to freedom, and assumes a meekness and submission even humbler than it's servile situation. It is now the most patient and gentle of all domesticated animals; and suffers with constancy, and perhaps with courage, all the ill-treatment which cruelty and caprice undeservedly inflict. It is extremely temperate, as well with respect to the quantity as the quality of it's provisions; being satisfied with the most neglected weeds, and making it's humble repast on the refuse of the horse and other animals. If it gives the preference to any vegetable, it seems to be the plantane, for which it is often observed to neglect other herbs. But, notwithstanding this apparent indifference as to food, it is peculiarly delicate in it's water, drinking only at the clearest brooks. It is, in fact, a pattern of abstemiousness, both in drinking and eating; nor does it ever dip it's nose in the stream, as is the practice of the horse. Being seldom saddled, it frequently rolls itself on the grass; and lies down for this purpose whenever opportunity permits, without regarding it's burden. It is, extremely averse to water, never rolls in the mud like the horse, and constantly turns out of it's way to avoid the dirty parts of a road.

In it's juvenile state, the Ass is sprightly, and even beautiful; but it soon loses these qualifications either by age or injurious treatment, and becomes slow, stupid, and obstinate. It seems to evince no ardour; except only that the male is so extremely libidinous, that he has been known to drop down dead

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dead immediately after copulation; and that the female is as strongly attached to her young as the male is to her, not being deterred, either by fire or water, from protecting her foal. The Ass is remarkably partial to its owner, by whom it is too often abused: it scents him at a considerable distance; distinguishes him from others in a crowd; and seems to know the roads he has passed, as well as the place he inhabits. When overloaded, it shews the tyrant's injustice by hanging down its head, and lowering its ears; and, when too hard pressed, it opens its mouth, and draws back its lips, after a very disagreeable manner. If its eyes are blinded, it immediately becomes motionless; and, on being laid down so that one eye is concealed in the grass, while the other is covered with a stone, or any other article, it will continue fixed in the same situation, without attempting to rise, or free itself from these slight impediments. It walks, trots, and gallops, like a horse; but, though it sets out very freely, it is soon weary, and no corporeal inflictions are then capable of making it mend its pace. In vain does the unmerciful rider exert his whip, or his cudgel: the poor animal patiently endures it all; and, as if conscious of its own imbecillity, and of the inefficacy of resistance, does not even attempt to move.

But, notwithstanding the natural stupidity of this animal, it is capable of being trained with the same facility as most other quadrupeds; and several Asses have been rendered sufficiently sagacious and active to be exhibited as public spectacles. It is, however, the misfortune of this humble and useful animal, to be despised by man; though its efforts are exerted to please him, and its services are so cheaply purchased. The horse is the only favourite; and on him all expence and labour are bestowed: he is fed, attended, and stabled; while the Ass is abandoned to the inhumanity of the lowest rustics, or even to the barbarous sport of children; and, instead of gaining by the lessons it receives, is always a loser. It is forced along by blows; insulted with unnecessary stripes; and overloaded by indolence: and, as it falls generally to the lot of the poor, it largely participates in their wants and distresses. Thus this faithful animal, which would undoubtedly be the first of the quadruped kind, were there no horse, is considered as of little value: all its properties and qualifications being found elsewhere in a higher degree, the creature is entirely disregarded; and, from being naturally the second in the scale of utility, is degraded into the most insignificant of all domestic quadrupeds.

Hence so very little attention has been paid to the improvement of the breed, that it has been suffered to degenerate; and it appears highly probable that the Ass, of all other animals, is the most enfeebled, and rendered most diminutive, by being in a state of domestic servitude. The horse, the cow, and the sheep, are rendered larger by the skill and assiduity of man; while the Ass is permitted to dwindle in every generation. Indeed, it is with us so little valued, that the whole species would probably have been long since extinct, if the medicinal qualities of its milk had not tempted the avarice of mankind to continue the breed. This salutary liquid is in some cases esteemed the most sovereign, as well as the most innocent, of all prescriptions: it is extremely nourishing and abstergent, and therefore highly valued in hectic complaints, in disorders of the stomach, abscesses of the kidneys, the stone in the bladder, and arthritic

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pains. It appears to be gently cathartic, and was frequently directed by Hippocrates to be used in large quantities where moderate purging was necessary. When applied as a topic, it renders the gums firm, alleviates arthritic pains, and gives the face an agreeable whiteness.

Were there as much care bestowed on the Ass as commonly falls to the share of the horse, and were the same industry used in crossing the breed and improving it, there is great reason to suppose that we should soon see the Ass emerge from its present humble state, and become a very respectable and useful animal, frequently rivalling the horse in some of its qualities, and even exceeding him in others. In proportion to their respective magnitudes, the Ass is considerably stronger than the horse; surer-footed; and, though slower in its motions, much less apt to start out of the way.

The Spaniards seem to be better acquainted with the nature of the Ass than any other nation in Europe; and, as they use every necessary precaution to improve the breed in Spain, it is no unusual thing to meet with an animal of this species full fifteen hands high.

The Ass seems to have been originally a native of Arabia, and other parts of the east; and warm climates still produce the largest and best. Their size and spirit both evidently decline on their removal into colder regions. 'With difficulty,' says Mr. Adanson, speaking of the Asses of Senegal, 'did I know this animal, so different did it appear from those of Europe: the hair was fine, and of a bright mouse colour; and the black list, which crosses the back and shoulders, had a fine effect.' These were the Asses brought by the Moors from the interior parts of the country.

The emigration of the Ass has been very slow; and, though it is now so common in all parts of these islands, the breed was entirely lost among us during the reign of Elizabeth. Holingshed informs us that, in his time, 'our lande did yeelde no Asses.' But we are not to suppose that such useful animals were unknown in these kingdoms before that period; for mention is made of them so early as the reign of King Ethelred, above four hundred years before; and again in the reign of Henry III. so that the breed must have been unaccountably lost during the reign of Elizabeth. At what period it was again introduced, is not certain; but it was probably in the succeeding reign, when our intercourse with Spain was renewed, where this animal was then much used, as well as at present. In Sweden, the Ass appears to be a kind of rarity; nor does it appear, from the most recent history of Norway, that it has yet reached that country: while, in Guinea, it is larger, as well as more beautiful, than even the horse of the same country. In Persia, there are two kinds of Asses: one of which, used for burdens, is slow and heavy; the other, which is kept for the saddle, being stately, and nimble. They are managed in the same manner as horses; except that the rider sits nearer the crupper: and, like them, they are taught to amble. Their nostrils are generally enlarged, in order to allow them more room for breathing; and one of them is frequently sold for forty or fifty pounds.

The Ass is not only more hardy than the horse, but liable to fewer diseases; and it is less subject to be infested with vermin than any other hairy animal; probably on account of the dryness and hardness of its skin. Like the horse, it takes three

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or four years in arriving at a state of perfection; and frequently lives to the age of twenty or twenty-five. It sleeps very little, and never lies down for that purpose, till quite worn out with fatigue. The female goes above eleven months with young, and never brings forth more than one at a time. The mule may be engendered between a stallion and an Ass, or between an Ass and a mare; but the latter breed is every way preferable, being both larger, stronger, and better shaped. It is not as yet certain whether the animal called the gimmerro be one of these kinds; or, as is usually asserted, bred between the Ass and the bull. While naturalists, however, contend for the impossibility of this admixture, the natives of the Alpine countries, where this animal is bred, as strongly insist on its reality. The common mule is very healthy, will live about thirty years, and is extremely serviceable in carrying burdens; particularly in mountainous and stony places where horses are scarcely capable of walking. The size and strength of our Asses, however, is at present greatly improved by the importation of Spanish Jack or male Asses: and, with care and attention, we might in time equal the Spaniards themselves in breeding them.

Asses, indeed, seem now perfectly naturalized in this country: the climate and soil appear perfectly to agree with them; and their utility daily becomes more and more evident. Being now introduced into many drudgeries formerly allotted to horses, they are very serviceable in saving those noble animals for higher purposes. Many of our richest mines are in situations almost inaccessible to horses; where these sure-footed animals are employed to advantage in conveying our mineral treasures from one place to another. We may also add that, since our horses are become a considerable article of commerce, and bring great sums annually into these kingdoms, the improvement of an animal which will in many instances supply the place of the horse, as well as enable us to enlarge our exports, certainly demands the attention of every well-wisher to his country.

ASTERIA. A name by which some authors have distinguished the accipiter palumbarius, or gohawk.

ASTERIAS, or SEA STAR. A genus of shapeless and deformed worms, forming a numerous tribe, and which assume different appearances at different periods. The same animal which at one time appears round like a ball, very soon after flattens as thin as a plate. All insects of this kind are formed of a semi-transparent gelatinous substance, covered with a thin membrane; and, to an inattentive spectator, often appear like a lump of inanimate jelly, floating at random on the surface of the sea, as if casually thrown ashore at the departure of the tide: but, on a more minute inspection, they are found to be possessed of life and motion. They are seen shooting out their arms in every direction, in order to seize on such objects as are within their reach, which they devour with great rapacity. Worms, the spawn of fish, and even muscles themselves, with their hard resisting shells, have been found in the stomachs of these voracious creatures; and, what is more extraordinary, though the substance of their own bodies be almost as soft as water, they are in no respect injured by swallowing these shells, which are almost of a stony hardness. In summer, when the water of the sea is warmed by the heat of the sun, they float on the surface; and in the night-time they emit a kind of

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luminous effluvia, resembling that of phosphorus. Some naturalists have given these animals the names of sea-nettles, because they irritate the hands of those who touch them, after the manner of those weeds. They are often found affixed to the rocks, and to the largest sea-shells, as if they derived their nourishment from them. If injected into spirits of wine, they will continue entire for many years; but, on being exposed to the air, they melt down, in less than twenty-four hours, into a limpid and offensive liquid.

Among the whole of this species, none are found possessed of a vent for their excrements; but the same passage which admits their food, serves also for the ejection of the fæces. These animals, as before observed, assume a great variety of shapes; so that it is difficult to describe them under determinate figures; but their bodies in general resemble truncated cones, whose bases are attached to the rocks where they are usually found adhering. Though generally transparent, they are frequently found of different colours: some inclining to green, others to red; some to white, and others to brown. In some, the colours appear diffused over the whole surface; in some they are only streaked; and, in others, they are often spotted. They are possessed of a very slow progressive motion; and, in fine weather, they are continually seen expanding themselves, and fishing for their prey. Many of them contain a number of long slender filaments, in which they entangle any small animals they happen to encounter, and thus draw them into their voracious stomachs, which occupy the whole cavities of their bodies. The harder shells continue undigested for several weeks; but, at length, undergoing a kind of maceration in the stomach, they become assimilated with the substance of the animal. These creatures may be cut in pieces, and yet every part of them will survive the operation; each soon becoming a perfect animal, endued with the natural rapacity of the species.

ASTERIAS, COMMON. The Common Asterias, which is furnished with five depressed rays, is broad at the base, subangular, rough, and of a yellow colour, having a round striated covering on the back. This species of the star-fish, however, is sometimes found defective, or with four rays only. It is common to the British seas; and generally abounds among oysters, to which it is very destructive.

ASTERIAS, DOTTED. The Dotted Asterias has likewise five smooth rays; but is distinguished from the common species by being dotted or punctured; and is of a beautiful purple colour.

ASTERIAS, RIMMED. The Rimmed Asterias has also five smooth rays, but the sides are surrounded with a regular scaly rim: on the mouth is a plate of a cinquefoil form; and the colour is somewhat reddish.

ASTERIAS, ROUGH. The Rough Asterias has five broad rays, and becomes angular at the top: the body is entirely covered with short bristles; and the colour is brown.

ASTERIAS, GIBBOUS. The Gibbous Asterias is distinguished by five very short and broad rays, slightly projecting: it is much elevated, and covered with a brown rough skin; and the mouth is situated in the midst of the pentagon.

ASTERIAS, FLAT. The Flat Asterias is furnished with five very broad and membranaceous rays, which are extremely thin and flat. This species has been caught near Weymouth, but is very scarce.

ASTERIAS,

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ASTERIAS, MINUTE. The Minute Asterias has a circular body, and is provided with five very long and slender rough rays.

ASTERIAS, LIZARD. The Lizard Asterias is so called from the similitude of it's rays to the tail of a lizard; being smooth, slender, scaled, jointed, and white.

ASTERIAS, BEADED. The Beaded Asterias is pentangular and indented; smooth above the aperture, and five-pointed below. Between the bases of the respective rays, which are jointed, taper, and very rough on the sides, there is a small globular bead.

ASTERIAS, CINQUEFOIL. The Cinquefoil Asterias, which carries it's name in it's figure, is regularly cinquefoil; and is furnished with very slender rays, which are rough on the edges, and marked with green both above and below.

ASTERIAS, PIED. The Pied Asterias has a circular body, with ten radiated streaks: the extremities are in the form of a lozenge; and the rays are hispid, and annulated with red.

ASTERIAS, JAVELIN. The Javelin Asterias has a pentagonal and indented body, of a deep brown, marked with ten streaks of a reddish hue; five of which are extremely slender, and terminate in points resembling javelins.

ASTERIAS, RADIATED. The Radiated Asterias is distinguished by a round body, with streaks issuing from it's centre, alternately broad and narrow; having five slender and hispid rays.

ASTERIAS, INDENTED. The Indented Asterias has a circular body, marked with five equidistant indentations, which penetrate deep into the sides; five light-coloured streaks issue from the centre; and the rays are rough and slender.

ASTERIAS, BLACK. The Black Asterias is distinguished by the colour of it's body, from which it receives it's name, and five radiating streaks of white; the rays are rough, and of an olive colour, but reticulated with deeper shades.

ASTERIAS, BIFID. The Bifid Asterias has ten slender rays, beset with tendrils on their sides; and the mouth is surrounded with short rays resembling threads.

ASTERIAS, TEN-RAYED. The Ten-rayed Asterias is furnished with ten very slender rays, having a great number of long beards on their sides; and the body is minute, and encircled beneath with ten small filiform radiations.

ASTERIAS, TWELVE-RAYED. The Twelve-rayed Asterias contains twelve broad and finely reticulated rays, rendered hispid, with fasciculated papillae on the superior part; and, on the inferior, it is red and hispid. The ancient naturalists, according to Aristotle, gave the names of Aster, and Stella Marina, to this species of Asterias, from their resemblance to the pictured form of the stars of Heaven; and they also ridiculously fancied them possessed of so much heat, as to be capable of consuming whatever came in contact with them.

ASTERIAS, ARBORESCENT. The Arborescent Asterias is furnished with five rays issuing from an angular body; which are subdivided into innumerable ramifications, growing more slender as they approach the extremities. This species is by far the most curious of the whole genus: it is frequently caught on the coasts of Scotland; and it has sometimes been met with on the Cornish shores.

ASTRID. A name given to a particular species of the loxia.

ASTURIS. A name used by Ray, and some

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other naturalists, to express the accipiter palumbarius, or goshawk.

ASYLUS. A term by which some naturalists denote the gad-fly.

ATHERINE. A name given by Rondeletius, and some other naturalists, to the hepsetus, or anguella, a small fish common on the shores of the Mediterranean. Bellonius, however, appropriates it to a very different genus.

In the Linnæan system, the Atherine falls under the order of abdominales, and comprehends two species; viz. the hepsetus, and the menidia. The former, which is very common in the sea near Southampton, is there called a smelt; and the season of it's highest perfection is from the beginning of March to the end of May, or the beginning of June, when it usually spawns. It never quits those parts of the sea, and may be constantly caught, except during a very hard frost. It is not, however, entirely confined to this spot; but is sometimes found on other coasts of this island. It measures about four inches and a half in length; the back is straight, and furnished with two fins; the belly is somewhat protuberant; and the tail is considerably forked. This fish is of a silvery colour tinged with yellow, semipellucid, and covered with scales: the side-line is straight; and below it there is a row of small black spots. The latter species of the Atherine is found in the fresh-waters of Carolina, and is called by Garden the silver-fish.

ATINGA GUACU MUCU. A Brazilian bird, about the size of a thrush. The head is large; the bill, which is of a greenish yellow colour, is somewhat hooked; the eyes, which are sanguine, have black pupils; and the tail, which is remarkably long, consists of about ten feathers, some of the lower ones being shortest, but others, as well as all the upper ones, full nine inches. The head, neck, back, wings, and tail, have brown, or rather foot-coloured feathers, which are darkest in the tail; where, likewise, every feather, for about half an inch, is white and red, divided with shades of black. The throat, breast, belly, and thighs, are cinereous; and, on the head, there are long feathers, which the bird is capable of erecting, so as to appear like two horns. The legs, which are ash-coloured, are of a moderate length; and the feet have each four toes, disposed after the usual manner. Willughby, from the similarity of size, the conformation of the bill, and other resemblances, esteems it of the thrush kind; but some other naturalists have referred it to the starling tribe.

ATRICAPPIA. The name of a small bird, commonly called the black cap; described by some authors under the appellation of sicedula fycalis, or melancholyphus; and, by the Italians, under that of caponegro.

ATRICHIA. A species of the laurus.

ATTAGEN. A very beautiful bird, described by Aldrovandus; and called by the Italians Francolini, or Free Fowl, because the vulgar are restricted from taking it. The Attagen, as well in size as in the entire conformation of it's body, resembles the pheasant. It has a short black bill, crooked at the end; a fine crest of yellow feathers, variegated with black and white spots, is erected on the top of it's head; the eyes, which are black, have yellow irides; and the eyebrows, like those of the heathcock, are composed of naked scarlet-coloured skin. Under the bill, and in the beginning of the throat, hangs a tuft or beard of fine feathers; the neck, which is long and rather slender,

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is cinereous, variegated with black and white spots; the spots of the breast are the same, but having a ferrugineous mixture; and the belly, tail, and thighs, are of a lead colour spotted with black. The fore-toes of the feet are long, the back-toe is short; and they are all armed with crooked claws.

The Attagen is found plentifully in the mountains of Sicily, and seems to be a species of our red game.

Bellonius and Scaliger have both mentioned the Attagen; and Martial and Aristophanes represent it as the most delicious bird served up at public entertainments. Trallian recommends it in consumptive complaints; Galen, in nephritic disorders; and Avicenna is of opinion that it increases the seminal secretions. The flesh is certainly delicious, nutritive, and easy of digestion, to a very high degree.

ATTELABUS. A genus of insects belonging to the order of coleoptera, in the Linnæan system, and including thirteen species. The head is attenuated and inclined; and the antennæ are thickest towards the apex.

ATTILUS. A river fish of the sturgeon kind, called by some authors adello, adano, and adeno. It grows to a very large size; and, when it has attained its full dimensions, it casts its scales, and ever after remains perfectly smooth: in which respect it certainly differs from the common sturgeon. It seems, however, to agree in every essential point with the *huso Germannorum*. It is esteemed proper for food; but is much inferior in flavour and taste to the sturgeon.

ATTINGA. A species of diodon, in the Linnæan order of nantes.

AVIS. The classical name for a bird.

AVIS LONGA. A name used by Nieremberg to express the *hoctlattotl* of the Americans; a bird remarkable for its swiftness in running.

AVIS NIVEA. A name under which Nieremberg has described an American bird, of the size of a thrush; variegated with black and brown on the back, and yellow under the belly. It imitates the human voice, and is called *ceoan* by the natives.

AVIS PENNIPULCHRA. The name of an American bird described by Nieremberg, called by the Indians *quetzaltotl*. It grows to the size of a pigeon; and its whole body is covered with the most beautiful pavonaceous plumage. There are three or four different species of this genus: Ray, however, has ranged all of them under the number of birds whose natural history is either uncertain or but little known.

AVIS TROPICORUM. A bird of the size of the common duck, to which the English commonly give the name of the tropic bird. It is only found within the tropics, and thence it obtains its name.

AVOSETTA. A very curious bird chiefly found in Italy, but an occasional visitant of the British isles. It is about eighteen inches long from the head to the extremity of the tail; very erect; and furnished with legs unusually long for its size. The bill turns up like a hook, in an opposite direction to that of the hawk or parrot, and widely different from that of any other bird whatever. This extraordinary bill, which is black, flat, sharp, and flexible at the extremity, is about three inches and a half in length. The tongue is short; the head, as well as half the hind part of the neck, is black; all the under side of the body is of a pure white; the back, the coverts on the ridge of the

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wings, and some of the lesser quill-feathers, are of the same colour; and the other coverts, with the exterior sides and ends of the greater quill-feathers, are black. The tail consists of twelve white feathers; the legs, which are of a fine blue colour, are naked higher than the knees; and the webs are dusky, and deeply indented.

The Avosetta feeds on worms and insects, which it scoops out of the sand with its bill: and its progress in search of food is frequently to be discerned in the sand by the appearance of alternate semicircular marks. It lays two eggs, about the size of those of the pigeon, which are white tinged with green, and marked with large black spots.

These birds are frequently observed in winter on the eastern shores of this kingdom: sometimes in Gloucestershire, at the mouth of the Severn; and at others on the lakes of Shropshire. When disturbed, they fly backwards and forwards over the heads of those who have excited their apprehension of danger, after the manner of the lapwing, carrying their necks and long legs quite extended, and making a shrill noise, continually reiterated; for which reason the country people usually call them yelpers, and sometimes picarini.

AUK. An aquatic bird, of which there are several species: particularly, the Large Auk; the Common Auk, or Razor-bill; the Black-billed Auk; and the Little Auk.

AUK, LARGE. The Large Auk breeds in the Isle of St. Kilda, where it appears about the beginning of May, and retires about the middle of June. It lays only one egg, about six inches long, which is of a white colour, marked with purple lines, and sometimes with ferrugineous spots; and, if this egg be removed, it seldom lays another during that season. It has been observed, that this bird does not make an annual visit to that island, but has sometimes been absent for several years successively; that it deposits its egg close to the sea-mark; and that it is among the most inattentive of all the feathered race to the propagation of its species, and the care of its young.

This curious bird is about three feet long; and the bill is upwards of four inches. The upper mandible is partially covered with short black velvet-like feathers, and is very strong. Between the eyes and the bill, on each side, there is a large white spot: the rest of the head, neck, back, tail, and wings, are of a beautiful glossy black; and the tips of the lesser quill-feathers, together with the whole underside of the body, are white. The wings being only about four inches long, are consequently of little service for flight: hence this bird is seldom found far from the shores; and on land it appears incapable of ascending to any considerable height by the assistance of its wings.

AUK, COMMON, OR RAZOR-BILL. This fowl is about eighteen inches long, and twenty-seven broad. The bill, which is two inches in length, and of a black colour, is very strong, and sharp at the edges; the upper mandible being marked with four transverse grooves, and the lower with three. The head, throat, and entire upper side of the body, are black; the wings and tail are likewise black; except the tips of the lesser quill-feathers in the former, which are quite white. The whole under-side of the body is white.

These birds seldom begin to breed till May, though they generally appear, in company with the guillemot, early in February. They fix their abodes on the extreme margins of lofty rocks hanging over

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over the sea; where they form a very grotesque appearance, from the singular order of the rows in which they sit one above another. The eggs afford a considerable share of subsistence to the natives of the coasts which these fowls frequent, though they are taken with the most imminent danger. The resolution and activity these people shew in acquiring this part of their food, almost exceed the bounds of credibility. The eggs are generally deposited in such situations, that there is no possibility of procuring them without being lowered by ropes, the adventurer trusting to the strength of his companions for his preservation from destruction: and, indeed, the unstable nature of the footing is such, that the most horrid catastrophes have frequently occurred, the protectors and protected being at once hurried down the steep, dashed to pieces against the rocks, and precipitated into the ocean.

The Razor-bill lays but a single egg, which is of an extraordinary size in proportion to the bulk of the bird, and generally white, though sometimes of a pale sea-green, irregularly spotted with black. However, when this egg is taken or destroyed, it produces another to supply its place; and, on losing that, it even lays a third. It builds no nest, but deposits its egg on the edge of a rock with such nice equilibrium as to secure it from rolling off; and this is done with so much art, that if an egg is removed, and attempted to be replaced by the human hand, it is always extremely difficult, and sometimes absolutely impossible, to place it exactly in the same situation.

AUK, BLACK-BILLED. This bird, which is only fifteen or sixteen inches long, is full twenty-five in breadth. The cheeks and throat are white; and the bill is black: but in almost every other respect it coincides with the former species, to which some naturalists think it ought to be referred, notwithstanding these variations.

AUK, LITTLE. This extraordinary fowl is about the size of a common blackbird. The bill, which is convex, short, and thick, is of a black colour; and the legs and feet are covered with dirty greenish white scales, the webs being black. The crown of the head, hind part of the neck, entire back, and tail, are quite black; the wings are likewise black, except the tips of the lesser quill-feathers and the inner coverts of the wings, the former of which are white and the latter grey; the cheeks, throat, and under parts of the body, are all white; and the scapular feathers are white and black.

This bird is described by Willughby under the appellation of the small black and white diver with a short sharp-pointed bill; who adds to the above account, that the tail is short and a little white on each side, and that the bird is not very common.

Edwards has likewise noticed a bird that varies in a very slight degree from the Little Auk; and one, which he imagines differs only in sex: the head and neck of the latter being wholly black, and the inner coverts of the wings barred with a dirty white.

AULOS. A name by which several of the ancient writers have called the solen or razor-fish.

AURA. A species of vulture.

AURANTIUS PISCIS. A name which Nieremberg applies to the dorado, or dolphin; a species of the coryphæna, distinguished from the others by its forked tail.

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AURATA. A name sometimes given to the gilt-head.

AURICULA. See **EARWIG.**

AURIS ASINI, or ASS'S EAR. A name given to a species of shell-fish, of the order of murex, supposed to bear some resemblance to the Ear of the common Ass.

AURIS MARINA. The ear-shell, or sea-ear.

AURIS PORCI. A name given by some naturalists to a sea-shell of the family of murex, from its resemblance to the ear of a hog.

AUSTURCUS, or OSTERCUS. The classical name sometimes applied to denote the gof-hawk: from whence falconers, who keep that species of hawk, are denominated Ostringers.

AXIS. A very beautiful animal of the deer kind, found in Africa and the East Indies, and of which naturalists observe two or three varieties.

AXIS, COMMON. This species is about the size of a fallow-deer, and of a light red colour. The body is beautifully variegated with white spots, and the lower part of the sides next the belly is marked with a line of white. The tail, which is about the length of that of the fallow-deer, is red above and white beneath. The horns are slender, and triple-forked; the first ramification being near the base, and the second near the top, each pointing upwards. It inhabits the banks of the Ganges, and the Isle of Ceylon: though it seems to bear the European climates without injury; and has even been bred in the menagerie of the Prince of Orange, near the Hague. It is extremely docile, and possesses the sense of smelling to a very exquisite degree. It eats bread with avidity; but, from the quality just mentioned, will refuse a piece which has been breathed on.

AXIS, GREAT. This animal, which is a native of Borneo and Ceylon, is about the height of a horse, and of a reddish brown colour. The horns, which are trifurcated, thick, strong, and rugged, are about two feet nine inches long, and two feet four inches between tip and tip.

This species frequents the low marshy places in Borneo; for which reason it is called, in the Javan and Malayan languages, mejangan banjoe, or the water stag.

AXIS, LESSER. The Lesser Axis is generally of the same colour with the former, but sometimes varies to white.

This is a gregarious animal, and inhabits Java, Ceylon, Borneo, and some other oriental islands. In Java and Celebes it is hunted with ardour, and affords the highest diversion. The flesh, which is esteemed excellent food, is usually cut into pieces, dried in the sun, and preserved in salt.

AXOIOTI. A singular species of fish found in the lakes of Mexico; which is furnished with four feet like a lizard; has a matrix like a woman, as well as the menstrual flux; and is destitute of scales. Its flesh tastes like that of the eel; and, notwithstanding its very peculiar conformation, it does not seem to possess any noxious qualities.

AYGULA. A species of ape.

AZOOPIHAGUS. A term used by some naturalists to express such animals or insects as feed entirely on herbs, and never taste the flesh of any living creature. This term is therefore perfectly synonymous with herbivorous; and is applied in opposition to such animals as are naturally carnivorous.

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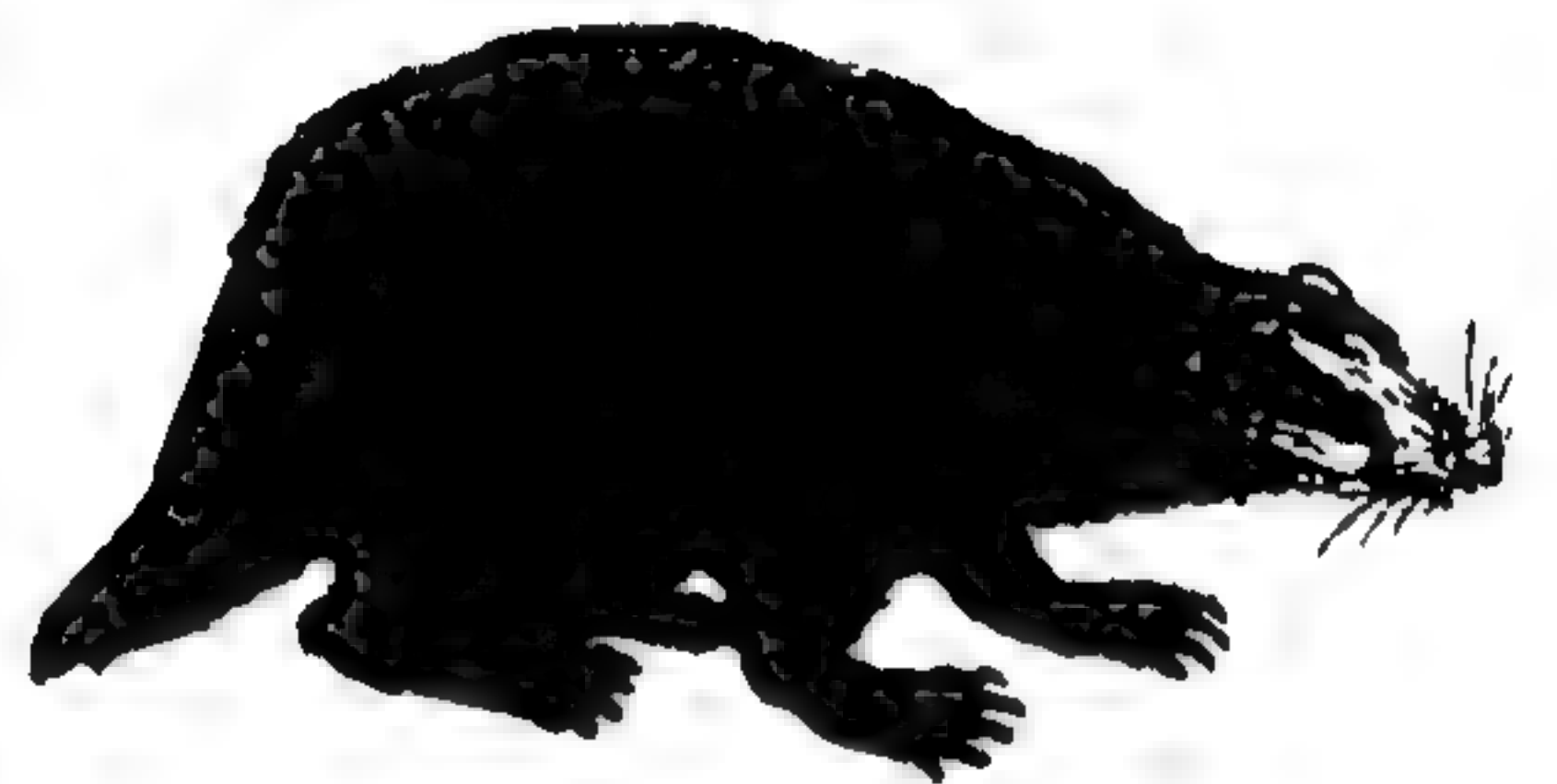
BABOON. The Baboon, which composes the second division of the monkey kind, is a large, fierce, and formidable race: and the human figure, as well as that of the quadruped, being blended in it's conformation, it seems only to possess the defects of both; all the native petulance of the former, and all the ferocity of the latter. In man, the leading features do not always indicate the temper of the mind; but, in animals, physiognomy is less liable to deceive: their dispositions may be gathered from their looks, and their internal propensities from their external forms. Viewing the ape and the Baboon in this light, it will evidently appear that they considerably differ in their dispositions; and that the latter is infinitely more fierce, savage, and malicious, than the former. The ourang-outang, which so nearly resembles man in it's figure, of all irrational animals, approaches the nearest to him in the gentleness of it's manners, and the docility of it's temper. The Barbary ape, which is the most distant of all it's tribe from the human form; and, with respect to it's face, approaches nearer the dog; bears also, in it's nature, a strong resemblance to the brute, being wild, restless, and impetuous, in all it's motions: while the Baboon, which is still farther remote from it's similarity to man, in having a tail, a prominent face, and sharp claws, approaches also nearer to the savage tribe in it's manners, and is extremely fierce, indocile, and mischievous.

The Baboon, properly so called, grows from three to four feet in height, is very strong built, has a thick body and clumsy limbs, with canine teeth of a disproportionate magnitude. It has large callosities behind, which are quite naked and red; it's tail is thick and crooked, and about seven inches long; it's snout (for it can hardly be considered as a face) is long and thick; and it has a pouch on each side of it's cheeks, in which it deposits the remainder of it's provisions after having gormandized sufficiently. It's hair, which is of a reddish brown colour, is pretty uniform over it's whole body. It very seldom affects an erect posture; and, instead of broad round nails, like those of the ape, it's hands, as well as feet, are armed with long sharp claws. Thus formed for strength, and furnished with dangerous natural weapons, this animal, in it's native haunts, proves itself to be one of the most formidable of the savage race. In this state, it appears to be actuated by two very opposite passions; an aversion to men, and a libidinous desire for women. These strange contrarieties in it's disposition might appear very questionable, if they rested on the testimonies of only one or two naturalists; but, as they are authenticated by the most credible and unbiassed, as well as the most inquisitive, observers of nature, we cannot refuse them our assent. From such authorities we learn, that these animals often attack women in bodies, and force them into the woods, where they confine them; and, if refractory, put them to death. We are informed by the Chevalier Forbin, that, in Siam, whole troops of these Baboons will often sally forth from their native woods, and attack the women of a whole village, when they know the men are ab-

sent on any expedition, or engaged in the rice harvest. On such occasions, they seem actuated by desire, as well as by hunger; and not only plunder the houses of what provisions they can find, but also endeavour to violate the women. The latter, however, as the Chevalier humorously relates, disliking either the manner or the figure of their beastly gallants, boldly stand on the defensive, and with clubs, or whatever arms they can provide, instead of meeting their caresses, soon compel them to retreat. The Baboons of Africa are certainly less formidable than those of Siam; their strength being inferior, and their power of doing mischief consequently less. At the Cape of Good Hope they seem under a kind of natural discipline, performing whatever they undertake with surprising skill and regularity. When they set about plundering an orchard or a vineyard, they do not go individually to work, but in large companies, and with preconcerted deliberation. On such occasions, while some enter the inclosure, one is stationed as a centinel, and the rest stand without the fence, and form a line reaching to their rendezvous, which is generally in some contiguous craggy mountain. Every measure being thus settled, the plunderers within the orchard throw the fruit to those who are without, as quick as they can gather it; which being pitched from one Baboon to another, all along the line, with surprising expedition, it is speedily deposited in their head-quarters. While this business is carrying on, the most profound silence is observed among the whole fraternity; and if the centinel, who continues assiduously on the watch, and is extremely anxious and attentive to every motion, perceives any enemy approaching, he instantly sets up a loud cry, at which signal the whole company precipitately retreat. They are not, however, on any account inclined to leave the place empty-handed, but carry off as much fruit as they conveniently can in their mouths, their hands, and under their arms. If the pursuit is continued, and they are in danger of being overtaken, they first drop the fruit which is lodged under their arms; next, that which is in their hands; and, lastly, what they have concealed in their mouths.

These animals, however, are by no means incapable of being tamed, and rendered subservient to some beneficial purposes. The natives of the Cape of Good Hope sometimes catch them when young; and, feeding them with sheep and goats milk, accustom them to guard their houses; a service they perform with extraordinary punctuality and fidelity. But those which we have seen imported into Europe are usually head-strong, rude, and untractable. Animals in general, when they have committed any mischief, indicate their sense of it, by running away; but these, seemingly careless and insensible, never appear conscious of having acted amiss.

Bossion gives us the following description of an animal of this kind. 'It was not (says he) remarkably ugly, and yet it's aspect excited horror. It continually appeared in a state of savage ferocity, gnashing it's teeth, darting at the spectators, and furiously restless. It was obliged to be confined in an iron cage, the bars of which it forcibly attempted to break; so that spectators were filled



1. BROWN BABOON. 2. LARGE BABOON. 3. LION-TAILED BABOON. 4. WOOD BABOON.
5. BABYROUSSA. 6. COMMON BADGER.

filled with apprehension. It was a strong, bold animal, whose short limbs and powerful exertions shewed vast strength and agility. The long hair with which it was covered, seemed to assist its mischievous ability; which, however, was in reality so great, that it could easily overcome a single man, unless he was properly armed. In other respects, it always appeared excited by that passion which at intervals will render the mildest animals furious and untractable. It was insolently lascivious, and gratified its strong desires in public. It seemed also to make a parade of its nakedness, oftener presenting its posterior, than its head, to the view of the spectators.

But however violent the desires of these creatures may be, they are by no means prolific in this climate. The female usually brings forth only one at a time, which she carries in her arms, clinging to her breast in a peculiar manner. As to the other qualities of the race of Baboons, they do not by any means appear carnivorous; they principally subsist on fruits, roots, and corn; and generally herd together in companies. Their internal structure is more unlike that of men than of quadrupeds; particularly the liver, which is divided into six lobes, like that of a dog. The lungs are also more divided; the guts, in general, are shorter; and the kidneys are more round and flat.

The different species of Baboons are very numerous, if we may give credit to some naturalists, who seem more ambitious of swelling the catalogue of their names, than of elucidating the nature and habits of the animals.

BABOON, LARGE, or PAPIO. The Large Baboon has a canine and very thick face, in some parts of a bright vermilion colour, and ending truncated like that of a hog. The ears and mouth are small; the irides are of a hazle colour; but the cheeks, throat, and beard, are yellow. The hair on the forehead is extremely long and black, and forms a kind of pointed crest. The head, arms, and legs, are covered with short black and yellow hair intermixed; and the breast with long whitish hairs of a yellow tinge. The feet and hands are black; and the nails are flat. The buttocks are red, bare, and obscene; but the space above them is covered with beautiful purple hair. The creature grows to near five feet in height; possesses very formidable powers; is endowed with extraordinary strength; and is naturally fierce, libidinous, and indocile.

Schreber informs us, that this animal lives on succulent fruits and nuts; that it is extremely fond of eggs; that it will drink immoderate quantities of wine or brandy; but that it rejects all sorts of flesh, unless previously dressed. This species is a native of the warmer climates of Africa.

BABOON, MAIMON, or the MANDRIL of Buffon. This is an ugly, disgusting animal, which grows to a considerable stature. The muzzle is longer than that of the preceding. It is of a blueish colour, and strongly marked with wrinkles, which gives it a very hideous aspect. But the creature is rendered most inexpressibly loathsome by a kind of snout continually issuing from its nose, which it licks off at intervals with its tongue, and swallows. It is a native of the Gold Coast; more frequently walks erect than on all-fours; and, when displeased, is said to express its sorrow by a kind of infantine complaint. Some years ago, one of this species was exhibited in England: it appeared tame, but stupid; and had contracted a habit of opening its mouth, and blowing on those who approached it.

Linnaeus places this animal among his *simia cauda elongata*; and applies somewhat different synonyma to it; however, there cannot remain a doubt that this is his *simia maimon*.

Several varieties of this species of Baboons have been described by different authors; but their accounts are so contradictory, that we chuse to pass them over in silence.

BABOON, WOOD. This animal has a long canine face, which is covered with a glossy black skin: the hands and feet, which are naked, are of the same colour with the skin of the face. The hair of the whole body is long, and elegantly mottled with black and tawny. The height of this animal is three feet; and its tail is about three inches long. This species inhabits Guinea; and is called by Europeans the man of the wood.

The Yellow, Cinereous, and Brown Baboons, differ chiefly from that just described in their respective colours; from which they receive their several names.

BABOON, LITTLE. The Little Baboon has a roundish head, projecting mouth, and round and naked ears. The thumbs are close to the fingers; the nails of the fingers are narrow, and compressed; and those of the thumbs are rounded. It has a brown face, with a few scattered hairs; the colour of the hair on the body is yellowish, tipped with black; the tail is about an inch long; and the buttocks are covered with hair. Linnaeus says that it is about the size of a squirrel; but Mr. Balk asserts that it is as large as a cat. This species is a native of India, and is extremely lively.

BABOON, CRESTED. The Crested Baboon has very long and dishevelled hair on its crown; its cheeks are of a dusky colour; the breast is whitish; and the rest of the body, together with the limbs, are covered with long black hair. The face is black and naked; and the tail is slender, taper, and about seven inches long. This animal inhabits Africa; and is about two feet long.

BABOON, PIGTAIL, or the MAIMON of Buffon. This creature, in size and conformation, approaches very near to the monkey tribe, being no larger than a cat. Its chief distinction, exclusive of its prominent visage, like the Baboon race, is in the tail, which is about six inches long, and curled up like that of a hog; from which circumstance it has obtained its name. Its face is naked, and of a swarthy redness; it has two sharp canine teeth, and ears like the human species. The crown of the head is dusky; the limbs and body are brown, inclining to cinereous; the fingers are black; the nails are long and flat; and the thumbs on the hind-feet are very long, and connected to the nearest toe by a broad membrane.

This animal, which is a native of Sumatra and Japan, does not seem capable of enduring the rigours of this climate. Edwards, however, kept one of them a whole year in London; and another of them happening at the same time to be exposed in an exhibition of wild-beasts, he brought the two exiles together, to see if they could claim acquaintance, or acknowledge their kindred; when these creatures, the moment they saw each other, testified their mutual satisfaction, and expressed the utmost joy at the interview. This is a very docile animal; and, in Japan, is taught several tricks, and carried about by the mountebanks. Keempfer was informed by one of these people, that the Baboon he owned was a hundred and two years old.

BABOON, DOG-FACED. The Dog-faced Baboon has

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has a long thick nose, covered with a smooth red skin; the nails on the fore-feet are flat, and those on the hind-feet are like a dog's. The head is large and flat; and the hair on the cheeks, and as far down as the middle, is of a grey and olive colour, very long and shaggy. The buttocks, which are bare, are covered with a skin of a bloody hue; and the tail is pretty long, and generally carried erect.

This species, which inhabits the hottest parts of Africa and Asia, is very fierce and dangerous. They herd together in large companies, and commit numerous depredations with a sagacity and method altogether astonishing. They are equally detestable in their manners and in their appearance, being impudent, indecent, and lascivious. Some of them grow to upwards of five feet in height; and are so strong, that a man would be but a feeble opponent, if reason did not give him an advantage over strength merely brutal. One of these creatures, which was exhibited in London some years ago, manifested it's desire for women in a most astonishing manner. A footman, who had taken his sweetheart to see the animal, on perceiving this propensity, kissed her, and folded her in his arms, purposely to tease it; when the Baboon, enraged at being so tantalized, seized a pewter pot, and threw it with such force and address at it's rival, that if the man's hat and wig had not moderated the blow, his scull must inevitably have been fractured.

BABOON, BEAR. This creature has a large head, and a long nose; that part of the head which projects over the forehead is prominent, and terminates in a ridge, which is covered with long erect hairs; and, indeed, the whole body of the animal is clothed with such long shaggy hair, that at first sight it appears like a bear, from which fancied resemblance it receives it's name. This species inhabits the Cape of Good Hope, where it is both numerous and mischievous; but, when confined, it becomes tolerably tame; though, on every slight provocation, it discovers a most revengeful and malicious disposition.

BABOON, LION-TAILED. The Lion-Tailed Baboon, which has a face like that of a dog, is naked, and of a dusky colour. It's nails are flat; and it's tail is terminated with a tuft of hair like that of the lion. But the most distinguishing peculiarity in this animal is, it's large white, coarse, rough beard; the colour of the rest of the body being black, except the belly, which appears of a light hue. It is a native of the East Indies, and the warmer African climates; and seems in almost every respect to answer the description of the animal to which Buffon gives the name of the wanderow.

BABYROUSSA. This animal, which is sometimes called *Porcus Indicus*, or the Indian Hog, has generally been referred by naturalists to the hog genus, though it seems essentially different; having neither the hair, the bristles, the head, the stature, nor the tail, of a hog. It's legs are considerably longer; it's snout is shorter; it's body is more slender, and somewhat resembles that of a stag; it's hair is finer, and of a greyish colour, rather resembling wool than bristles; and it's tail is tufted with the same. From these variations, therefore, we can scarcely consider it as a hog. It has also four enormous tusks, growing out of each jaw; the two largest from the upper, and the two smallest from the under. The jaw bones, from whence these monstrous tusks proceed, are very thick and strong, and seem to distinguish it from all other quadrupeds whatever. The two tusks which proceed from the lower jaw are only about six inches long;

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while those of the upper exceed eighteen. They have a circular bend like those of the boar, and the two lower ones stand in the jaw of the *Babyroussa* in the same manner as they are seen to do in the above animal; but the two upper ones rise from the upper-jaw rather like horns than teeth; and, bending upwards and backwards, have their points sometimes directed to the animal's eyes, and often prove fatal by growing into them. Were it not that the *Babyroussa* has two such large teeth underneath the two upper, they would naturally be considered as horns; and, in fact, as their sockets are directed upwards, Dr. Grew was induced to adopt that opinion. But, as the teeth of both jaws are of the same consistence, and as they both proceed from sockets after a similar manner, the analogy between them is too strong to suppose that they are of a different nature. The upper-teeth, when they leave their sockets, immediately pierce the superior lip of the animal, and grow as if they immediately rose from the cheek. The tusks in both jaws are of a very fine ivory, smoother and whiter than that of the elephant, but neither so hard nor so durable.

From these enormous tusks this animal derives a very formidable appearance; and yet it is accounted much less ferocious than the wild boar. Like animals of the hog kind, it is gregarious, and often seen in company with the wild boar; with which, however, it is never known to engender. It has a very strong scent, which immediately discovers it to the hounds; and, when pursued, it growls dreadfully, often turning back on the dogs, and wounding them with the tusks of it's lower jaw, those of it's upper being rather an obstruction than a defence. It is infinitely swifter than the boar; and has a more exquisite scent, winding the men and dogs at a very remote distance. When hunted closely, and in apparent danger, it will, if possible, plunge into the sea, where it swims with great swiftness and facility, diving and rising alternately; and in this manner it frequently escapes it's pursuers. Though fierce and formidable when offended, it is, when unmolested, peaceable and innoxious: it is easily tamed; but it's flesh, though generally esteemed salubrious, is said to become putrid in a very short time. It reposes in a way very different from that of most other large animals; hitching one of it's upper tusks on the branch of a tree, and then suffering it's whole body to swing down at ease. Thus suspended by a single tooth, it continues quite secure during the whole night, and out of the reach of such animals as hunt it for their prey.

The *Babyroussa*, however, though seemingly a hostile creature, and probably carnivorous, appears nevertheless to live chiefly on the leaves of trees and vegetables. It seldom, like the boar, attempts to break into gardens, in order to pillage them of the more succulent productions of human industry; but lives remote from the abodes of men, contented with personal security, and the humblest fare. It has been asserted by some naturalists, that the *Babyroussa* is found only in the Island of Borneo; but this assertion is undoubtedly erroneous, as this animal is well known in many other parts both of Asia and Africa, particularly in Celebes, Senegal, and Madagascar.

BACCHUS. A name given by some naturalists to the mignon, a fish of the mullet kind, remarkable for the red colour of it's lips, and the extremity of the covering of the gills.

BACTRIANUS. A species of the camel.

BADGER,

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BADGER. This animal, termed *mellis*, or *taxus*, in the Linnæan system, is described as a species of the *ursus*, called in different parts of England, the brock, the gray, and the pate. Its legs are so very short, that its belly seems to touch the ground; but this is in fact a deception, occasioned by the length of its hair, which makes the creature appear much more bulky than it really is.

The Badger is a solitary, stupid animal, seeking refuge in the most sequestered places, where it digs a deep hole with remarkable assiduity. It seems averse to the light, and seldom quits its retreat till the night season, when it steals from its subterraneous abode for the purpose of procuring subsistence. Its legs being short and strong, and its claws stiff and horny, it burrows in the ground with the greatest facility. As it continues to bury itself, and to throw the earth behind it to a great distance, it forms for itself a long winding hole, at the bottom of which it remains in security. The fox being less expert at digging into the earth, frequently avails itself of the labours of the Badger; and, as some assert, forces the Badger from its retreat, by depositing its own excrements at the entrance of the hole.

The Badger, however, is not long in forming a new habitation; from which it seldom ventures far, as it is by no means remarkable for its fleetness. When it is surprized by dogs at any great distance from its hole, it combats them with desperate resolution, falling on its back, and defending itself in that posture to the last extremity. It sleeps away the greatest part of its time; by which means, without possessing a very voracious appetite, it always appears fat and plump, particularly in winter: it is also remarkable for its cleanliness. The female breeds in summer, and generally produces three or four young ones at a time, which at first she nourishes with her own milk, and then gradually habituates them to such humble prey as she can procure; seizing young rabbits in their warrens; robbing birds nests; finding out where the wild bees have laid up their honey; and bringing the whole plunder to her famished brood. Though old Badgers always continue savage and untractable, young ones are easily tamed, so as to play with the dogs, and follow their owners, like other domesticated animals. They are remarkably attached to a warm fire; which they often approach so closely, that they burn themselves in a very dreadful manner. They are subject to the mange; and have glands under their tails, which emit a strong scent. The poor of some countries eat their flesh; which, notwithstanding its being fat, is at best but rank and disagreeable.

These animals are generally hunted during the winter nights; and their hind quarters are sometimes made into hams, which are said to be tolerable food. Their skins, with the hair on them, are used for pistol furniture; and their hair is made into brushes for softening the shades in painting.

Badgers inhabit most parts of Europe, as far north as Norway and Russia: they are also found in China; and are often exposed to sale in the butchers shops of Pekin, their flesh being much admired by the Chinese. Badgers abound in every part of Great Britain, but seem most numerous in the midland counties.

Badgers are either caught by means of springs or steel traps, or by digging pits across their paths five feet deep, and four feet long, making them narrow at the top and bottom, and wide in the

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middle. These pits are covered with small sticks and leaves, that the animals may not suspect any danger, but inevitably fall into them whenever they tread on the surface. Sometimes they are hunted into their holes, and then dug out; but this method is very tedious, as they burrow extremely deep.

Naturalists have described three species of the Badger; the Common, the American, and the Indian.

BADGER, COMMON. The Common Badger has small eyes; short ears; a short thick neck; and very short and thick legs. The nose, chin, part of the cheeks, and the middle of the forehead, are white; the ears and eyes are encircled with a pyramidal bead of black; the hair on the body is long and rough, of a yellowish white at the roots, black in the middle, and cinereous at the points. The throat, breast, and belly, are black; and the tail, which is about six inches long, is covered with hair of the same colour with that on the body. The length of this animal is commonly two feet six inches, from the nose to the insertion of the tail; and it weighs from twenty to thirty pounds.

Naturalists formerly distinguished the Common Badger by the name of the Swine Badger, and the Dog Badger; from the fancied resemblance of their heads to those animals; and so divided them into two species. But the most accurate observers of nature have only been able to discover one kind; namely, that which has a head like the canine race.

It appears that the Common Badger is confined to the cold or temperate parts of the globe, being never found in the warmer climates of India or Africa.

BADGER, AMERICAN. The American Badger is distinguishable by a white line passing from the tip of the nose to the back of the neck, bounded with black as far as the hind part of the head; then by a white line; and, immediately between that and the ears, by another black one. The hair over the whole body is long, being ash-coloured on the back and belly, and yellowish on the sides. The thighs are darkish; and the tail is covered with long yellow hairs tipped with white, and terminating in a dusky colour.

This animal is a native of Terra del Labrador; and is very seldom seen in this country, either alive or in a state of preservation. Buffon describes it from a stuffed skin; and succeeding naturalists have in general adopted his words.

BADGER, INDIAN. The Indian Badger has scarcely any external ears; its head is small; its nose is pointed; each foot has five toes; and its claws are very long and straight. The nose and face are black; and the crown, neck, back, and upper part of the tail, are white, inclining to grey; but the legs, belly, sides, and the under part of the tail, are black. Its length, from the tip of the nose to the insertion of the tail, is about two feet; and the tail itself is about four inches long, and covered with short and smooth hair.

This species, which is a native of India, is carnivorous, sportive, and mild. It sleeps with its head between its hind-legs, and is a very rare and curious animal.

BÆTUS. A name given by Aristotle, and some other ancient Greek writers, to the fish called by the Latins *cottus*; supposed by modern naturalists to be the same with the bull-head, or miller's thumb.

BAGADAT. A term expressive of the *columba tabellaria*, or carrier-pigeon. This name

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is probably a corruption of the word Bagdat, the city from which this bird is sometimes imported into Europe, though originally brought hither from Bassora.

BAGRE. A small bearded fish of the anguilliform kind, of which there are several species. It is destitute of scales, but its whole body is covered with a soft mucous skin of a silvery whiteness, of which colour likewise are the beard, the head, and the fins. The eyes are large, the mouth is small, and it has no teeth. It is caught in the American seas, and is esteemed eatable.

This fish is a species of the silurus, in the Linnæan system.

BAGRE DE RIO. A name sometimes given to the fish generally known by that of nhamdia.

BAIT, WHITE. A small fish caught in great plenty, during harvest, in the River Thames near Blackwall, and esteemed very delicious. The White Bait, which is certainly the fry of some particular fish, has been attributed to the shad, the sprat, the smelt, and the bleak. Pennant, however, observes, that this fish belongs to the genus of cyprinus, because it has only three branchiostegious rays, and one dorsal fin. Its body is compressed, like that of the bleak, its usual length being two inches; the under-jaw is the largest; the irides are silvery, and the pupils black; the dorsal fin consists of about fourteen rays; the side-line is straight; and the tail, which has black tips, is forked.

BALANCE FISH. The English name for the zygæna of naturalists; a fish of the whale kind, to which it is almost equal. The Balance Fish differs in size from all others with respect to the monstrous shape of its head, which resembles the large hammer of a blacksmith, at the extremities of which the eyes are placed; however, the forepart swells out into a semicircle, except that it terminates in an edge. The mouth, which is of an enormous size, is armed with three or four rows of exceedingly strong, broad, and sharp teeth, notched at the edges like a saw. The tongue is very broad; and the body is round and long, destitute of scales, and covered with a skin resembling leather. The spines on the back are continued to the superior part of the tail, where fins arise on each side. The tail is bifid; and, in many respects, this fish resembles the shark, though it may be easily distinguished from most others of its kind by the extraordinary formation of its head. It is a native of the Mediterranean Sea.

BALANI. A genus of shell-fish belonging to the class of multivalves, approaching nearly to the shape of an acorn, and usually found adhering to the shells of the larger sort of conchæ, but frequently distinguished in England by the name of centre shells. The Balani and the conchæ anatifera are frequently confounded together, though in reality very different. The Balani are sometimes found affixed to a variety of submarine productions; such as the harder sea-plants, and all sorts of crustaceous and testaceous animals, rocks, and timber. They may be ranged very properly under the two distinctions of wide and narrow-mouthed; and include several species. The small fish which nature has inclosed in this shell is of a very singular and admirable structure. Leewenhoeck confesses that he never met with any other animal in which so many objects of wonder were disclosed to the naked eye. It has twelve legs, or arms, crooked, and garnished with a great number of hairs,

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which it elevates on all occasions; and, besides these, it is furnished with eight others, inferior in size, and lower in position. The body in every respect resembles that of the conchæ anatifera. It is mucous, cartilaginous, and bad-tasted. The shell shapes itself, at the base, to the figure of the surface of whatever it adheres to, and from which it is, with difficulty removed. In the Linnæan system this is a species of the lepas.

BALATITI. A name given by the natives of the Philippine Islands to a particular bird, by the flight of which they pretend to divine future events, like the ancient aruspices.

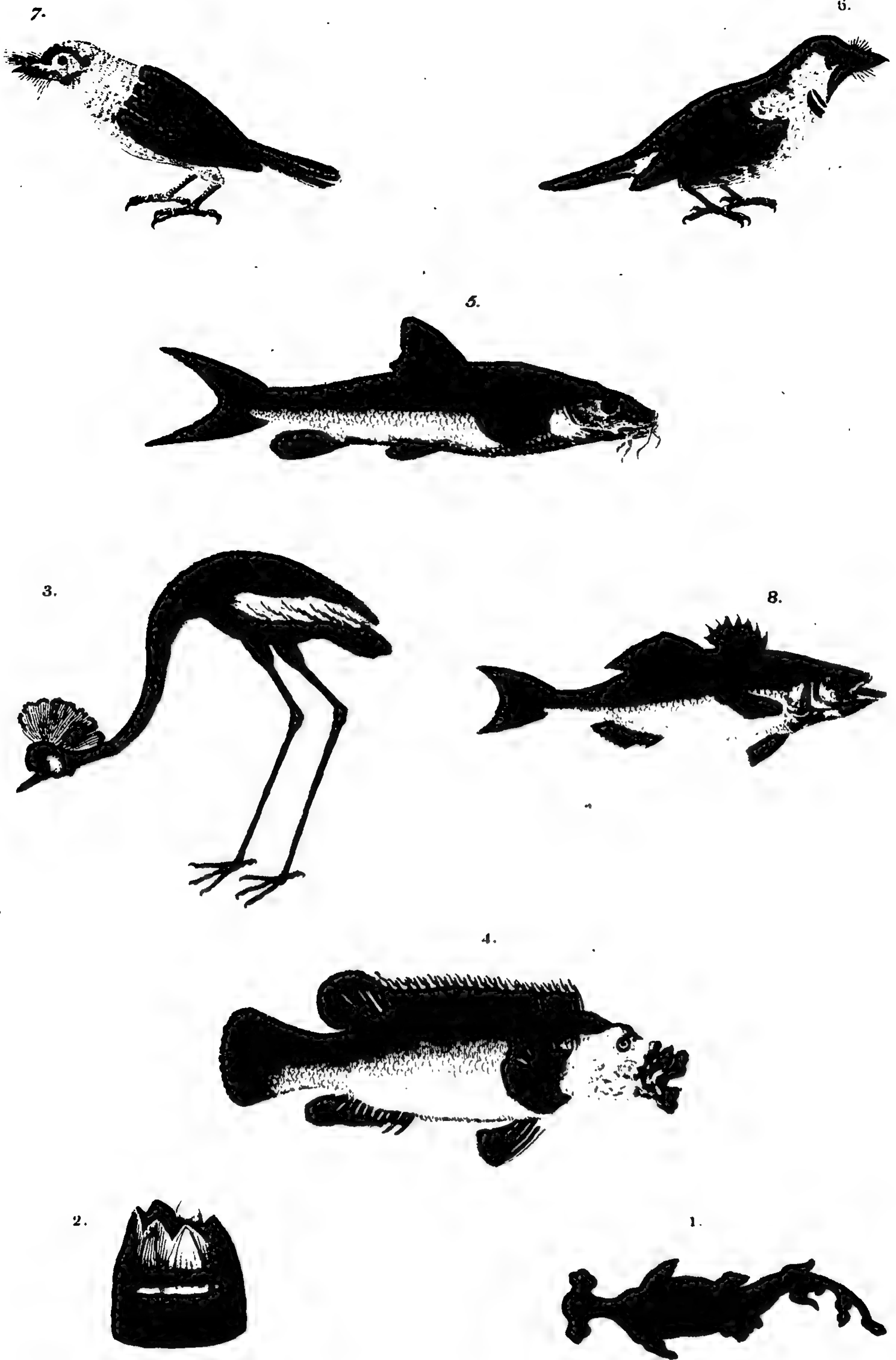
BALBUSARDUS. A classical name for the bird called in English the bald buzzard. It is of the long-winged hawk kind, and has been described by Aldrovandus, and some other naturalists, under the name of the halæetus and morphnus, two species of the eagle. It frequents the banks of ponds and rivers, and sometimes those of the sea, where it preys on fish. It builds its nest on the ground among reeds, where it lays three or four large white eggs, little inferior in size to those of the galinaceous tribe.

BALD PATE. An oriental fish, so called from its having no scales on the head and neck, though the rest of the body is covered with them. It is of a greyish colour; the mouth is extremely wide, and spotted with red; and the eyes are large, yellow, and prominent. It is caught in rivers, as well as in the sea; and the flesh is esteemed salubrious and agreeable.

BALEARIC CRANE. A name given by Pliny to a bird of the Crane kind, with a topping resembling that of the green wood-pecker. This bird was unknown to the moderns till they became acquainted with the birds of the tropical climates; when one of the Crane kind with a topping, was brought into Europe, and described by Aldrovandus as Pliny's Balearic Crane. It is pretty nearly of the shape and size of the common Crane, with long legs, and a long neck, like others of the kind; but the bill is shorter, and the colour of the feathers is of a dark greenish grey. The head and throat, however, form the most striking peculiarities in the conformation of this bird. On the head stands a thick, erect, round crest, composed of bristles, diverging every way, and resembling rays, diffused in various directions, the longest of which are about three inches and a half; and they are all terminated by a kind of black tassels, which give them a very rich and beautiful appearance. The sides of the head and cheeks are bare, whitish, and edged with red; and beneath the throat hangs a kind of bag, like that of a cock, but undivided. The eye is large and prominent; the pupil, which is black and large, being surrounded with a gold-coloured iris.

The Balearic Crane is a native of the coast of Africa and the Cape De Verd Islands; and by expanding its wings, it can run with great celerity, though its usual motion is but slow. When domesticated, it walks deliberately and majestically among other poultry, and suffers itself to be approached without any seeming apprehension. It never roosts in a house; but, when disposed to rest, it searches out some high wall, on which it perches, after the manner of a peacock; and, indeed, it so much resembles that bird in its several dispositions, that some naturalists have described it under the name of the sea-peacock, and even Ray seems inclined to refer it to that family. But though the

Balearic



1. BALANCE FISH. 2. BALANUS. 3. BALEARIC CRANE. 4. BALLAN. 5. BARBEL.
6. BARBET, RED-CROWNED. 7. BARBET, YELLOW-CHEEKED. 8. BASSE.

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Balearic Crane agrees in some particulars with that beautiful race of birds, it also differs from it in so many essential qualities, that it cannot be referred to the same family without violating the laws of natural history. It appears pretty evident, however, that this bird was unknown to the ancients; and that, though it has obtained its name from one described by Pliny, we should more properly consider the real Balearic Crane of that author as being the lesser ash-coloured heron, or perhaps the egret.

BALESTRA. A name given by Salvian, and some other authors, to the fish more generally known by the name of capricus.

BALISTES. A genus of the swimming amphibia, comprehending eight species.

BALIVIS. A name given by the natives of the Philippine Islands to the common duck of that climate; which is somewhat inferior in size to that of Great Britain, but much more beautifully variegated.

BALLAN. A species of the wrasse caught on the northern coasts of England, and differing in several particulars from the other species. It is formed like the common wrasse, except between the dorsal fin and the tail, where there is a considerable depression; above the nose is a deep sulcus; and, on the farther cover of the gills, there is a depression, radiated from the centre. It has only four branchiostegious rays; the dorsal fin has thirty-one; the pectoral fins have fourteen; the ventral has six; and the anal twelve. The tail is rounded at the extremity, and at the bottom, for a considerable space; and between each ray there is a row of scales. The colour of this fish is yellow, variegated with orange; and it commonly weighs about five pounds.

BALLERUS. A name given by some authors to a species of fresh-water fish of the leather-mouthed kind; which appears to be the same with the circassius, or (as some call it) the circassii tertium genus.

BALLERUS is also a name given by Aristotle to that species of cyprinus, called blicea pleystra and pallerus by the moderns.

BALTIMORE BIRD. The Baltimore Bird, which is generally found in Virginia and Maryland, is about the size of a linnæ; from the neck to the tail, as well as on the upper part of the wings, it is of a bright gold colour; and the head is black. It usually fixes its nest to two twigs at the end of a bough of the tulip or poplar-tree.

BALTIMORE BIRD, BASTARD. The Bastard Baltimore Bird has a pointed bill, with a black spot under it. The tail and wings are of a brownish ash colour; but all the other parts are yellow, except the feet, which are blue. The head and breast, together with half the back of the female, are of the same colour; and the tail is black. The lower half of the wings is also black; the upper half, the extremity of the back, the breast, the belly, and the thighs, are of a dirty red; and the feet are blue.

BANOY. A name given by the natives of the Philippine Islands to a species of hawk somewhat larger than our sparrow-hawk, of a yellowish colour on the back and wings, and white under the belly. It is the most common species of hawk in that climate; and is extremely fierce and voracious.

BANSTICKLE. A name frequently given to the gasterosteus. It is likewise called the prickle-bag, or prickle-back; and sometimes the stickle-back.

BARB. An appellation sometimes given to the

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Barbary pigeon, the columba numidica of Moore. This bird, which is but small, has a very short beak, like that of the bull-finch; with a naked circle of tuberosed red flesh round the eyes; and the irides are of a pale colour. The value of the bird increases in proportion to the breadth and deepness of the colour of this circle; which, however, is always narrow when it is young, and does not arrive at its full breadth till the fourth year of its age. Some of this species have a tuft of feathers behind their heads, but others want that beautiful distinction. When the bird is affected with sickness, the red circle round the eyes becomes pale and whitish. The proper colour of the Barbary pigeon is black, or dun; though there are likewise some pied ones: but these, being of a mixed breed, are esteemed far less valuable.

BARBATUS PISCIS. A name given by Salvian to the silurus, called in English the sheat-fish, the glanus of Pliny, and other ancient naturalists. Artedi describes this fish under the name of the silurus with four cirri, or beards, at the mouth. This seems to distinguish it from the fish called the lake, or alkussa; which, though certainly a genuine species of the silurus, has only one beard.

BARBE, or BARB. A beautiful, vigorous, and fleet breed of horses, brought from Barbary.

Barbs are generally slender made, their legs being far asunder. It has been remarked that Barbs grow ripe, but never old, because they retain their vigour to the last: and, for this reason they are greatly prized for stallions; their mettle, according to the Duke of Newcastle, ceasing only with their lives.

We are told that the Barbs anciently ran wild in the deserts of Arabia; and that some of them even exceed the ostrich in swiftness. Dapper informs us, that the most beautiful Barbs are sold sometimes at one thousand ducats apiece. They are fed with a very parsimonious hand; and their genealogies are preserved with as much care, and traced with as much precision, as those of the first families of Europe.

This valuable breed, however, is now much degenerated; the Arabians having been discouraged from keeping it up, through the violence and injustice of the Turkish officers, who seize them as soon as they are reared, without making a just compensation to their owners. At present, the Tingitanians and Egyptians have the reputation of preserving the best breed of Barbs, both with respect to size and beauty; the smallest of these last being usually sixteen hands high.

The principal qualities of the Barbs are, that they walk well; and stop short, if required, even in a full career. They are, however, lazy and negligent in all their motions; they will often stumble in walking over the smoothest ground; they trot very rough, and gallop very low; but, on the other hand, they are generally sinewy, nervous, and excellently winded, and therefore adapted for a long journey, if not over-weighted.

The mountain Barbs are accounted the best, because they are the largest and strongest: they belong to the Allarbes, a nation inhabiting the interior parts of Africa; for which reason they are not procured without difficulty.

Though Barbs are not unusual among people of fashion in this country, they fall infinitely short of that swiftness for which they are celebrated in their native regions. This may be accounted for, partly from the smallness and lightness of the Arabs, their riders; and partly, from their not being loaded with heavy

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heavy saddles and bridles, as in Europe, nor even with shoes. An Arabian's saddle is only a cloth girt round, with a pair of light stirrups, and a kind of pommel to support them.

BARBEL. A kind of fish which usually frequents the deep and still parts of rivers, where it lives in societies; and robs, like the hog, with its nose in the soft banks. It is so tame, that it frequently suffers itself to be taken with the hand; and numbers may be caught with great facility in diving. In summer it prowls about in search of food; but, in winter, it confines itself to the bed of the river.

The Barbel is sometimes found to weigh eighteen pounds, and to measure three feet in length. It is of a long rounded shape, and is furnished with small scales. The head is smooth; and on each corner of the mouth there is a single beard, another being situated on each side of the nose. The dorsal fin is armed with a remarkably strong spine, sharply serrated, with which it frequently inflicts a painful and severe wound. The scales are of a pale gold-colour, edged with black; the pectoral fins are of a pale brown; the ventral and anal fins are tipped with yellow; the tail is slightly bifurcated, and of a deep purple; and the belly is white.

This is one of the coarsest of all fresh-water fish; and is therefore seldom eat but by the poorer sort of people, who frequently boil it with bacon, in order to give it a relish. The roe is extremely noxious, affecting those who incautiously or ignorantly eat it, with a nausea, vomiting, and purging, attended with a tendency to tumefaction.

BARBET. A Ceylonese bird, to which the epithet of red-crowned is generally added, to distinguish it from the yellow-cheeked Barbet, an inhabitant likewise of the same country. The crown and throat are of a fine scarlet colour; the bill is dusky, and beset with bristles; there is a black line above each eye; and on the cheeks, and above the tip of each shoulder, there is a large whitish spot. The breast is yellow, but crossed by one bar of black and another of red; the back and coverts of the wings are of a fine green; the belly is white; the tail is green, except the exterior feathers, which are brown; and the legs are of a pale red.

BARBET, YELLOW-CHEEKED. A Ceylonese bird, the head and neck of which are of a clouded light brown colour; the cheeks, round the edges, are naked and yellow. The bill is red, and beset with bristles; the back is of a pale green colour; the coverts of the wings are green, but beautifully marked with small white spots in the centre of each feather; the primaries are green; and the interior edges are dusky. The tail and belly are green; and the legs are of a kind of olive colour.

BARBET. A name given by Reaumur, and other French naturalists, to a peculiar species of worms which feed on pucerons.

This worm is more particularly called Barbet blanc, or herisson blanc, from its being covered with oblong white tufts of filaments, standing in the manner of the quills of a hedge-hog or porcupine. This creature is of the size of a small fly when stripped of its wings; but the tufted covering so much increases its apparent magnitude, that it seems as large as a horse-fly. In this form the Barbet lives for about a fortnight, and then becomes a chrysalis; from which, after the space of a month, proceeds a small beetle, of the size of our cow-lady, in general of a dusky brown colour.

BARBONI. A name frequently given to the

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mustus barbatus, a fish generally caught in the Mediterranean, and esteemed very delicious.

BARBUS. The classical name for the barbel, called by some writers *mustus fluviabilis*, a species of the cyprinus.

BARGE. A name sometimes given to the godwit or stone-plover.

BARIS. An animal of the monkey kind, described by La Croix as a native of Sierra Leona. It generally walks erect; and, when tamed, is capable of performing many domestic offices; such as grinding Indian corn in a mortar, fetching water in a jar, and turning a spit. It seems, however, to be merely a species of the ourang-outang, or man of the wood.

BARNACLE. A name frequently given to the *conchæ anatifera*, a kind of shell fish sometimes found adhering to the bottoms and sides of ships; and, at others, to the fins and tails of whales, in certain seas.

Various species of shell-fish are included under the name of Barnacles; though some naturalists reduce them to two, viz. the *balanus*, and *pinna marina*.

BARNACLE. The Barnacle likewise denotes a bird of the goose kind, common in the Hebrides; concerning the origin and species of which many fables have been invented. Ancient credulity has represented the Barnacles as the produce of a marine animal, or sea-shell; but modern naturalists, on better evidence, refer it to the natural manner of generation of the feathered kind, making it a real goose, produced, like others, from an egg.

The Barnacle is likewise sometimes called the soland goose, or *anser Scotticus*. Some naturalists erroneously maintain that it is the same with the French *macreuse*, or *macrout*; and others, that it is the same with the *diable de mer*. Dr. Robertson, however, marks the difference; describing the Barnacle as of the goose kind; the *macreuse*, as of the duck kind; and the *diable de mer*, as of the moorhen kind. The same author endeavours to prove that the *macreuse* is the same with the *scoter*, or *anas niger minor*, described by Ray and Willughby, in contradiction to the opinion of M. Cattier, who took it for the greater coot of Bellonius; and also of others, who mistook it for the puffin of the Scillies and the Isle of Man.

BARNFIARD. A bird generally seen hovering over the watery element, and regarded by mariners as a prognostic of unfavourable weather. It is about the size of a sparrow; its neck and back are black; its breast and belly are grey; its feet are red; and its bill is black, and somewhat depressed. It swims very nimbly along the surface of the water, but the place where it breeds is unknown.

BARRACADA. A species of fish about fifteen inches long, and three broad. The lower-jaw is a quarter of an inch longer than the upper; the eyes are two inches distant from the extremity of the snout; the lower-jaw is furnished with very small teeth; and the upper with a double row, of which the exterior are the shortest. The fore-part is narrow as far as the gills, to which members it gradually increases; from thence it becomes almost of an equal thickness to the vent, where it begins to decrease to the beginning of the tail. The colour is dusky on the back, as far as the lateral line, which runs from the head through the middle of the sides to the tail; the belly is white; and the whole is variegated with small black spots, and

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and covered with very small scales. On the back there are two soft fins, each about an inch in length, and the same in breadth; there are also two more at the gills, two on the belly, and one behind the vent; and the tail is broad and furcated. This fish has no English name, nor is it certain where it is caught: it is, however, mentioned on the authority of Sir Hans Sloane.

BARRACOL. A Venetian term for a species of ray fish, called by Bellonius and Gesner, *miraletus*; and, by others, *raia oculata lævis*. Artedi calls it a ray with a smooth back and belly, having the eyes surrounded with a series of spines, and a triple row on the tail.

BARSE. An English name for the common perch; and also the Saxon name now in use for the same fish.

BASILICUS. A name given by some of the ancient naturalists to the *regulus cristatus*, or golden-crowned wren.

BASILICUS, or BASILISK. A serpent of the most malignant nature; its breath, and even look, being esteemed mortal. It is also said to proceed from a cock's egg brooded on by a serpent. These, and other stories, equally ridiculous, are related by Galen, Pliny, Dioscorides, and Erasistratus. Kirchmayer and Vander Weil, however, have detected the folly and imposture of the ancient traditions concerning it.

We meet with the Basilisk in holy writ; but the Hebrew word *Pethen*, which is translated Basilisk, signifies, according to the best interpreters and commentators, an Asp. In the Linnæan system the Basilisk is a species of the *lacerta*.

BASKET-FISH. A very singular fish sometimes caught in the North American seas, though not very frequent in any part of the world. Mr. Hooke, whom the Royal Society complimented with assigning it a name, calls it *piscis echinostellaris visciformis*. Its body resembles an egg-fish, or *echinus marinus*; and its arms are like the star-fish: the division of the branches having more the appearance of mistletoe than any other natural production we are acquainted with.

This fish spreads itself, from a pentagonal mouth-piece or root, in the centre of which the mouth is placed into five main limbs or branches; and each of these, at its first issuing out of the body, is divided into two, making ten in all. Each of these ten again divides itself into two, making twenty in all; and so on, till a fourteenth division is obtained, when they form upwards of eighty thousand limbs. After this stage they become too minute to be traced farther by the eye; but it is very probable that even these are successively subdivided.

The ramifications between the joints of the Basket-Fish are not all of them of an equal length; though, for the most part, they are pretty nearly so. The arms, or branches, which in their natural state are by no means very strong, on being dried, become so extremely brittle, that the smallest force is capable of destroying them.

This curious creature is sometimes found on the shoals of Nantucket, an island on the coast of New England; but, what is very remarkable, it is never seen there unless when caught by a bait-hook, laid for some other fish: this it clasps fast, and encircles with all its arms, when it ascends to the surface of the water, in the shape of a wicker-basket, from which circumstance it receives its name; but when it has been some time out of its native element, it becomes quite flat.

B A T

The numerous arms with which this fish is furnished are evidently intended to assist it in catching its prey; and it probably extends them to their full length while under the water, and enfolds in them every thing fit for food that happens to swim over, small mackerel having sometimes been found enclosed in the arms of the Basket-Fish.

It is evident that this fish is of the *stella arborescens*, or branched star-fish kind; but whether the same with that commonly known under the appellation of *caput Medusæ*, is uncertain.

The body of this fish, from what is related of its protuberance, and its resemblance to the *echini marini*, may probably form the *afteropodium* in its fossil state.

BASSANUS. A species of the pelican.

BASSE. The English name of the sea-wolf, the *lupus piscis* of naturalists, so called from its voracious appetites. It weighs about fifteen pounds, and resembles a trout in its shape, except that its head is proportionably larger. The irides are silvery; the mouth is large; the teeth are situated in the jaws, and are very small; and the scales, which are of a middling size, are remarkably thick set, and adhere closely to one another. The first dorsal fin has nine strong spiny rays, of which the foremost is the shortest, and the middlemost the highest; and the second dorsal fin consists of thirteen rays, the first spiny, and the others soft. The pectoral fins are furnished with fifteen soft rays; the ventral with six rays, the first spiny; and the anal fin has fourteen rays, the three first spiny, and the others soft. The back is of a dusky colour tinged with blue; the belly is white; and the tail is slightly forked. When young, the back is variegated with small black spots, which disappear as it advances in age.

The Basse is extremely well tasted, and very wholesome. It is found in the seas surrounding the British isles, but is seldom known to enter the mouths of rivers, though evidently a species of the perch.

BAT. A genus of animals which seem to fill up the chasm between quadrupeds and birds. Indeed, some naturalists have found animals of this kind so much partaking of the nature of both, that, in describing a Bat, they have been at a loss in which rank to place it; and have seemed to doubt, whether they were describing a bird or a beast. These uncertainties, however, no longer exist; for Bats are now universally ranked with quadrupeds, to which their viviparous nature, their hair, their teeth, and several other habitudes, evidently entitle them. Pliny, Gesner, and Aldrovandus, who placed them among birds, did not consider that they were destitute of every character of that order of animals, except the power of flying. Indeed, when this animal is seen at the dusk of the evening, supporting itself in the air with an awkward and seemingly constrained motion, it has, in some measure, the appearance of a bird; but naturalists, who have examined it with due attention, watched its habits, and inspected its conformation, are of a very different opinion.

The Bat scarcely resembles a bird in any one particular, except in that of supporting itself in the air. Like the quadrupeds, it brings forth its young alive, and suckles them; its lungs are formed like theirs; and its intestines and skeleton bear a complete resemblance to those of quadrupeds. In many respects it even approximates the human race; so much, indeed, as to have led some votaries

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of systematical arrangement to place it in the very highest class of animated nature.

BAT, COMMON. The Common Bat is about the size of a mouse, or nearly two inches and a half long. The members, usually called wings, are merely the four interior toes of the fore-feet extended to an enormous length, and connected by a thin membrane, reaching also to the hind legs, and from them to the tail. The first toe is entirely loose and flexible, serving as a heel when the Bat walks, or as a hook when it is desirous of adhering to any thing; and the hind-feet are disengaged from the surrounding skin, and divided into five toes, furnished with sharp claws. The body is covered with short fur, of a mouse-colour tinged with red; and the membranes are of a deep dusky hue. The eyes are small, and the ears exactly resemble those of the mouse.

This species of Bat is very common in England, and makes its appearance early in summer evenings. It principally frequents the sides of woods, glades, and shady walks; but is frequently observed to skim along the surfaces of rivers and canals. It generally preys on gnats, moths, and nocturnal insects of every kind. Its flight consists in a laborious, irregular motion: and, if it happens to strike against any object, and fall to the ground, it is usually caught with facility. It makes its appearance only during the most pleasant evenings; when its prey is abroad in great plenty, which it pursues with open mouth. At other times, it continues in its retreat, which is commonly the chink of a ruined building, or the trunk of a tree. This little animal, even in summer, sleeps away the greatest part of its time, never venturing abroad by day-light, nor in rainy weather; nor ever hunting for its prey except during a very small part of the night. But its short span of actual existence is still more abridged by its continuing in a torpid state during the whole winter season. On the first approach of cold weather, the Bat prepares for its state of lifeless inactivity; and seems rather to select a place where it may remain safe from interruption, than where it may be warmly or conveniently lodged. For this reason, it is usually seen hanging by its hooked claws to the roof of a cave, regardless of the dreadful surrounding damps. The Bat, indeed, seems to be the only animal that will venture to remain in these horrid subterranean abodes, unaffected by any possible change of weather. Such of this tribe as are not provident enough to procure themselves a deep retreat, where the cold and the heat can be but little affected by the external air, are sometimes exposed to great inconveniences: for the weather often becomes so mild, even in the middle of winter, as to warm them prematurely into life, and to allure them from their holes in quest of food, when nature has not provided them with a supply. These, therefore, having seldom strength to return, after exhausting themselves in a vain pursuit after insects which are nowhere to be found, become themselves the prey of owls, or other voracious animals.

The Bat copulates and brings forth its young in summer, generally from two to five at a time. The female, however, has but two nipples, which are placed forward on the breast, as in the human kind. From this peculiarity, Linnaeus gave the Bat the title of a primas, and raised this contemptible animal to the same order with the human species.

This assiduous enquirer into the secrets of nature, gives us to understand, that the female Bat, unlike

BAT

most birds and quadrupeds, builds no nest for her young, but seems fully satisfied with the first hole she meets with; where, sticking herself by her hooks against the sides of her apartment, she permits her young to hang at her nipple for the first or second day; and when she begins to grow hungry, and is necessitated to go abroad in quest of food, she sticks her little ones against the wall, in the same manner; to which they immovably cling, and patiently expect her return.

Thus far the Bat seems closely allied to the quadruped race; its similitude to the bird being infinitely less striking. As nature has furnished birds with extremely strong pectoral muscles, to assist them in moving their wings, and to direct their flight; so has she also furnished the Bat. As birds, likewise, have very weak legs, and unfit for the purposes of motion, the legs of the Bat are fashioned in the same manner, and the creature is never seen to walk but in cases of extreme necessity. The toes of its fore-legs extend the web-like membrane which lies between them; and this, being extremely thin, serves to lift its little body into the air. In this manner, by an unceasing percussion, much swifter than that of birds, the creature continues to direct its flight: however, the great labour required in flying soon fatigues it; for, extremely unlike some birds, which are capable of continuing for days together on the wing, the Bat becomes languid in less than an hour, and returns to the enjoyment of its retreat.

If we consider the Bat as it is usually seen in our own country, we shall find it an harmless, inoffensive creature; the general tenor of its industry being employed in pursuing insects which are much more noxious to us than itself can possibly be; while its evening flight amuses the imagination, and adds one figure more to the pleasing groupe of animated nature.

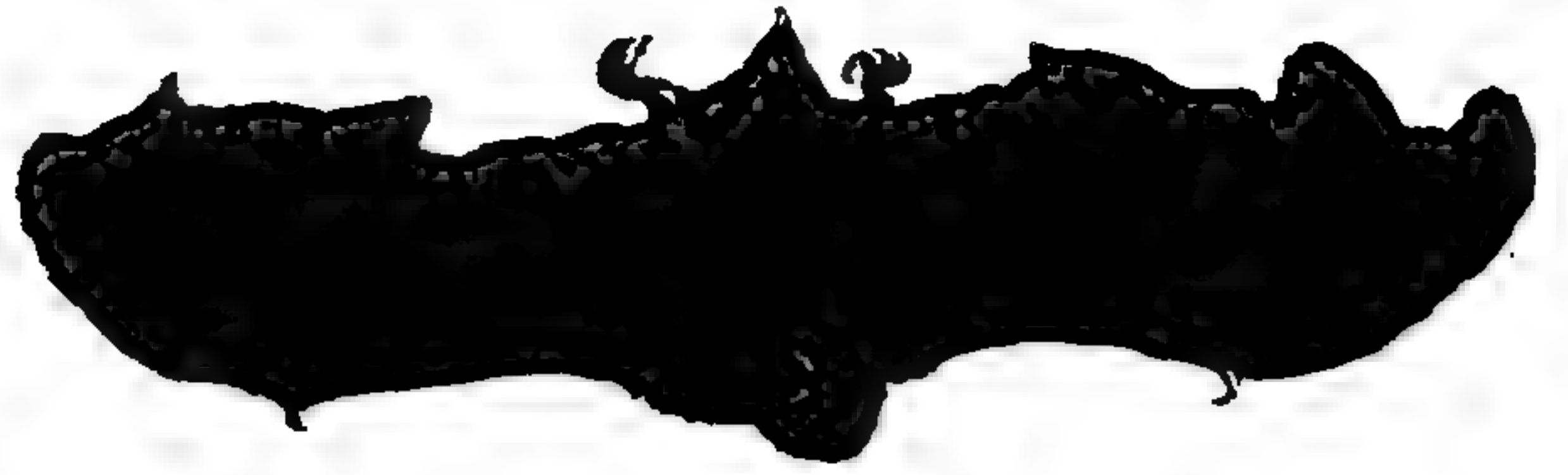
In the East and West Indies, Bats are truly formidable; each of them singly is a dangerous enemy; but, when united in flocks, they become dreadful. Des Marchais informs us, that Bats are so numerous on the coasts of Africa, that if the natives were to eat them, as is the case in the East Indies, they could never want a supply of food. In these regions, a flight of them is sufficient to obscure the setting sun; and, in the morning, they are seen sticking on the tops of trees, and clinging to each other, like bees when they swarm. The Europeans frequently amuse themselves with shooting among this huge mass of living creatures, and observing their embarrassment when wounded. These Bats sometimes enter the houses of the negroes, and destroy whatever provisions come within their reach.

BAT, GREAT MADAGASCAR. This very formidable creature, the roulette of Buffon, is nearly four feet broad when its wings are extended, and one foot long. It resembles the English Bat in the form of its wings, in its manner of flying, and in its internal conformation; but is essentially different from it in several particulars. It has large canine teeth; with four cutting ones above, and as many below. The nose is black and sharp; the ears are large, and naked; and the tongue is pointed, and terminated by sharp aculeated papillae. The exterior toe is detached from the membrane, the claw being strong, and hooked; the hind-feet have five toes, the talons of which are very strong, crooked, and compressed sideways; and the animal has no tail. The head is of a dark ferruginous colour; the neck, shoulders, and under-side, appear of a lighter

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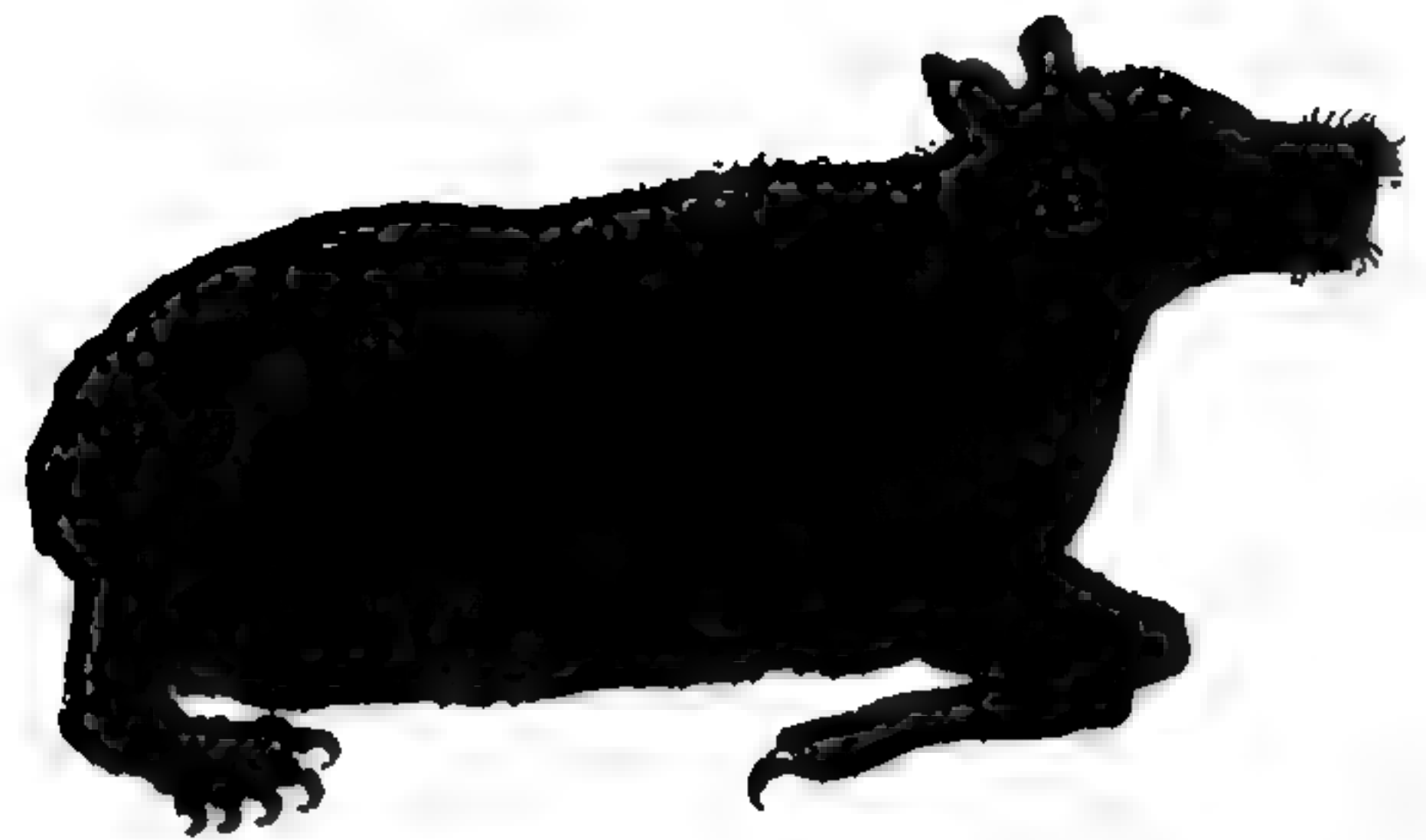
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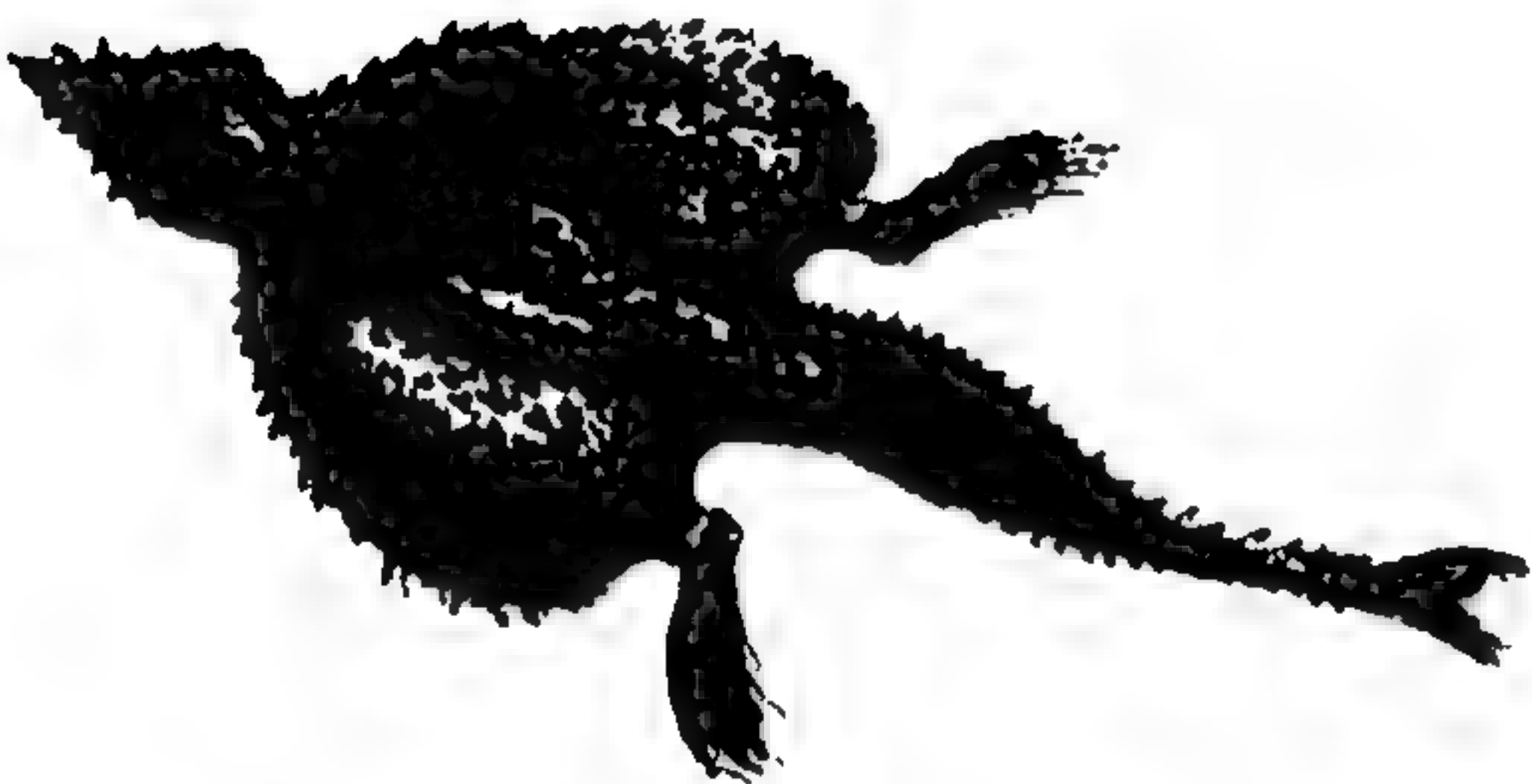
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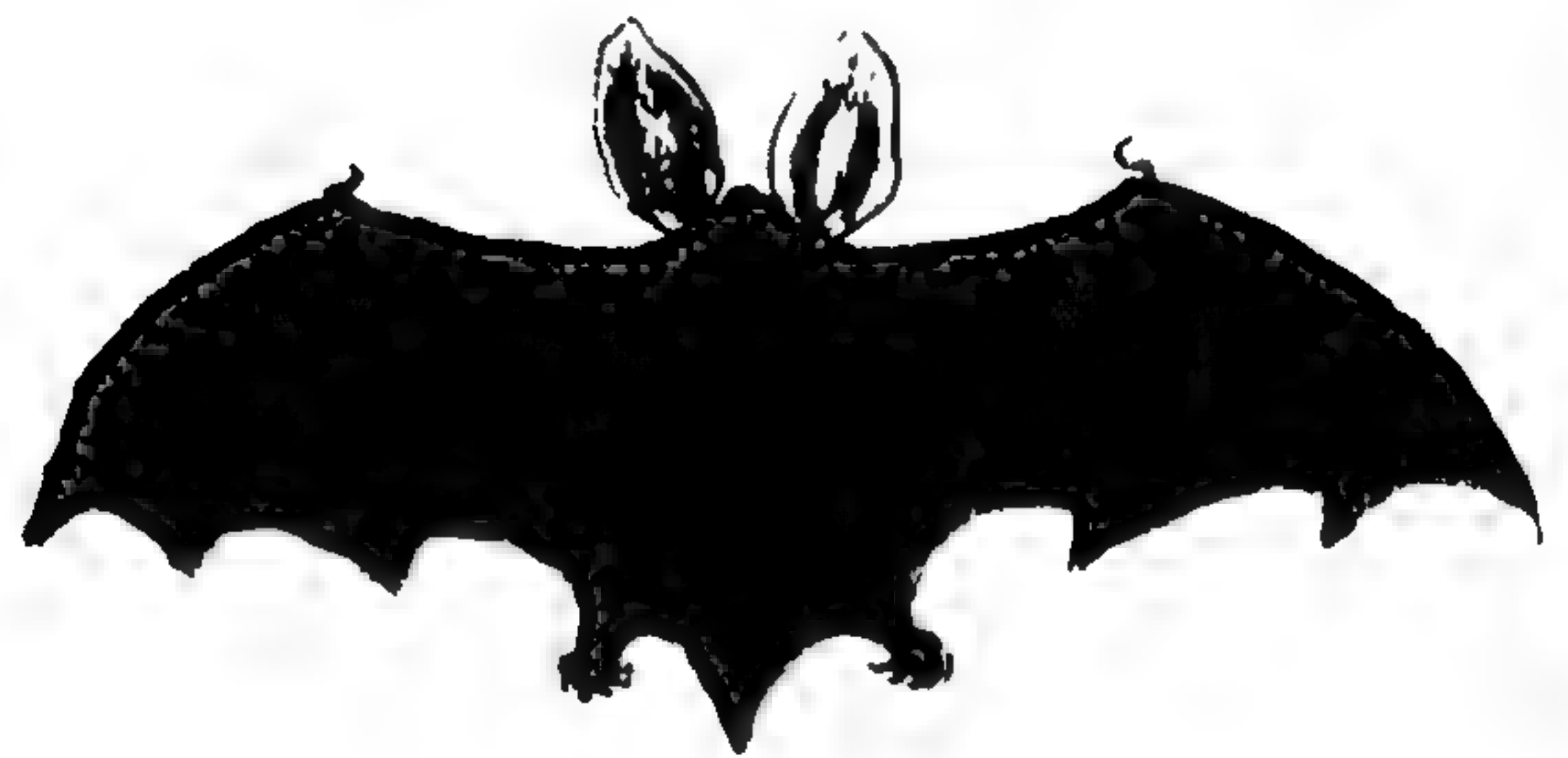
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1. GREAT-MADAGASCAR BAT. 2. HORSE-SHOE BAT. 3. LONG-EARED BAT. 4. NEW-YORK BAT.

5. SEA BAT 6. SPECTRE BAT.

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a lighter and brighter red; the hair on the back is dusky and smooth; and the membranes of the wings are likewise dusky. The colour, however, varies considerably; some being entirely of a reddish brown, and others dusky.

These formidable animals are found in Guinea, Madagascar, and in all the islands from thence to the most remote ones in the Indian Ocean. They likewise (as appears from the voyages of the late Captain Cook) abound in New Holland, the Friendly Isles, the New Hebrides, and New Caledonia. When they repose, they stick themselves to the tops of the tallest trees, from whence they hang with their heads downwards; but, when in motion, they have a very terrific appearance. They are seen in these islands in immense multitudes; darkening the air, as well by day as by night; destroying the ripe fruits of the country; and sometimes settling on animals, and even man himself: they indiscriminately devour fruits, flesh, and insects; and drink the juice of the palm-tree. They are heard at night in the forests, at the distance of more than two miles, making a horrible noise; but no sooner does day begin to approach, than they hasten to retreat. Hardly any thing is secure from the depredations of these noxious animals: they destroy fowls, and various domestic animals, unless preserved with the utmost care; and frequently fasten on the very faces of the inhabitants, where they inflict dangerous wounds. Indeed, it is very probable, as Buffon remarks, that the ancients have taken their ideas of harpies from these fierce and voracious creatures; as they both seem to concur in many parts of their description, being equally deformed, greedy, uncleanly, and cruel.

The Indians esteem the flesh of these animals peculiarly excellent, especially at certain seasons of the year, when they are very fat. The French, who inhabit the Isle of Bourbon, boil them in their bouillon, in order to give it a relish; while the negroes hold them in the greatest abhorrence. Many of them are of much larger dimensions than those already described. Beckman measured one that was five feet four inches from one tip of the wing to the other: and Dampier informs us, that he saw one which spread farther than he could reach with his arms extended. Their bodies are generally from the size of a pullet to that of a dove; their scream is dreadful, and their smell rank: they resist fiercely when attacked, and their bite is terrible.

Linnaeus gives this species the title of Vampyre, supposing it to be the same with that which draws blood from persons when asleep: but Buffon is of a contrary opinion, ascribing that faculty to a species found only in the new world. Pennant, however, differs from both these naturalists: and very justly observes, that there is reason to imagine that this thirst after blood is not confined to the Bats of one continent, nor of one species; for Bontius and Nieuhoff inform us, that the Bats of Java generally attack those persons who lie with their feet uncovered, whenever they can procure access into their apartments: and Gumilla, after describing a greater and a lesser species found on the banks of the Orinoco, declares them to be equally greedy after human blood.

Persons who have been thus attacked by this dreadful phlebotomist, have sometimes passed imperceptibly from a sound sleep into eternity. The Bat is so dextrous as to insinuate its sharp-pointed tongue unperceived into a vein, and to suck the blood till it is satiated; at the same time fanning

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with its wings, and agitating the air, which in hot climates lulls the sufferer into a more profound sleep. It is therefore dangerous to repose in the open air, or to leave any entrance unsecured by which those noxious animals can be admitted. They do not, however, always confine themselves to human blood; for M. De Condarnine, in his Voyage to South America, informs us, that in certain parts of that continent the Bats have destroyed all the cattle which were introduced there by the missionaries for the purpose of forming a settlement.

BAT, VAMPIRE, or SPECTRE. This animal, though less formidable in its appearance, is more mischievous than the former. It is furnished with a kind of horn at the extremity of the nose; and its ears are extremely broad, long, and erect. The hair on the body is ash-coloured and pretty long; the wings are full of ramified fibres; the membrane extends from one hind-leg to the other; and the animal being without any tail, three tendons proceed from the rump, which terminate at the edge of the membrane. It is a native of South America; where it lives in the palm-trees, and grows very fat. Ulloa informs us, that the Bats of this species, towards the close of day, leave their retreats, and visit the cities and towns, covering the streets like a canopy: and that they are the common pest of men and animals; effectually destroying the one, and considerably distressing the other.

Buffon supposes the Vampyre to be the principal blood-sucker; and, indeed, it is agreed by all travellers, that this Bat is possessed of the faculty of drawing blood from persons sleeping in exposed situations. But still a strong difficulty remains to be accounted for; namely, the manner in which it inflicts the wound. Ulloa supposes it to be done by a single tooth; but this is evidently impossible, since the animal cannot fasten on any thing with one tooth only, the teeth of the Bat being very even, and the mouth small. Buffon, therefore, supposes the wound to be inflicted by the tongue: but others, with a greater degree of probability, imagine that the animal is endowed with so great a power of suction, that the pores of the skin are thereby greatly enlarged, and the blood at length flows out; and, in confirmation of this opinion, we are told, that the Vampyre cannot injure any animal which has a thick skin.

BAT, JAVELIN. This species, which is of the size of the common Bat, is distinguished by its large pointed ears; and particularly by an erect membrane at the extremity of its nose, in the form of an ancient javelin, having two upright processes on each side. It has no tail; its fur is cinereous; and it inhabits the warmer parts of America.

BAT, LEAF. This animal, the *feuille* of Buffon, has small round ears; and a membrane on the nose, in the form of an oval leaf. It is furnished with a web between the hind-legs, but has no tail. The fur is of a mouse-colour tinged with red; and its size is equal to that of the common Bat. It inhabits Jamaica, Surinam, and Senegal. In the former island it lives principally in caves in the woods, and it is said to feed on the prickly pear.

BAT, CORDATED. The colour of the face of this animal is a light red, and that of the body still more pale. Its ears are very broad and long; and from the extremity of its nose runs a large membrane in the shape of a heart. It has a web between its hind legs, but no tail. This species inhabits Ceylon and the Molucca Islands.

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a lighter and brighter red; the hair on the back is dusky and smooth; and the membranes of the wings are likewise dusky. The colour, however, varies considerably; some being entirely of a reddish brown, and others dusky.

These formidable animals are found in Guinea, Madagascar, and in all the islands from thence to the most remote ones in the Indian Ocean. They likewise (as appears from the voyages of the late Captain Cook) abound in New Holland, the Friendly Isles, the New Hebrides, and New Caledonia. When they repose, they stick themselves to the tops of the tallest trees, from whence they hang with their heads downwards; but, when in motion, they have a very terrific appearance. They are seen in these islands in immense multitudes; darkening the air, as well by day as by night; destroying the ripe fruits of the country; and sometimes settling on animals, and even man himself: they indiscriminately devour fruits, flesh, and insects; and drink the juice of the palm-tree. They are heard at night in the forests, at the distance of more than two miles, making a horrible noise; but no sooner does day begin to approach, than they hasten to retreat. Hardly any thing is secure from the depredations of these noxious animals: they destroy fowls, and various domestic animals, unless preserved with the utmost care; and frequently fasten on the very faces of the inhabitants, where they inflict dangerous wounds. Indeed, it is very probable, as Buffon remarks, that the ancients have taken their ideas of harpies from these fierce and voracious creatures; as they both seem to concur in many parts of their description, being equally deformed, greedy, uncleanly, and cruel.

The Indians esteem the flesh of these animals peculiarly excellent, especially at certain seasons of the year, when they are very fat. The French, who inhabit the Isle of Bourbon, boil them in their bouillon, in order to give it a relish; while the negroes hold them in the greatest abhorrence. Many of them are of much larger dimensions than those already described. Beckman measured one that was five feet four inches from one tip of the wing to the other: and Dampier informs us, that he saw one which spread farther than he could reach with his arms extended. Their bodies are generally from the size of a pullet to that of a dove; their scream is dreadful, and their smell rank: they resist fiercely when attacked, and their bite is terrible.

Linnaeus gives this species the title of Vampyre, supposing it to be the same with that which draws blood from persons when asleep: but Buffon is of a contrary opinion, ascribing that faculty to a species found only in the new world. Pennant, however, differs from both these naturalists: and very justly observes, that there is reason to imagine that this thirst after blood is not confined to the Bats of one continent, nor of one species; for Bontius and Nieuhoff inform us, that the Bats of Java generally attack those persons who lie with their feet uncovered, whenever they can procure access into their apartments: and Gumilla, after describing a greater and a lesser species found on the banks of the Orinoco, declares them to be equally greedy after human blood.

Persons who have been thus attacked by this dreadful phlebotomist, have sometimes passed imperceptibly from a sound sleep into eternity. The Bat is so dextrous as to insinuate its sharp-pointed tongue unperceived into a vein, and to suck the blood till it is satiated; at the same time fanning

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BAT, PERUVIAN. The body of this Bat is nearly equal in size to that of a pretty large rat; and the extent of it's wings is two feet five inches. It has a head like a pug-dog; large, straight-pointed ears; and two canine, with two small cutting teeth, in each jaw. The tail is inclosed in the membrane which joins to each hind leg; being also supported by two long cartilaginous ligaments involved in the membrane. This animal is of an iron-grey colour.

There is another Bat with a large head and hanging lips like those of a mastiff. It is less than the former, but agrees with it in every other respect. It inhabits Peru, and is frequently met with on the Mosquito shore.

Linnaeus, on account of the number of it's teeth, places this species among the glires, next to the squirrels, under the name of *noctilia Americanus*; but such is the variety in the numbers and dispositions of the teeth in animals of this genus, that a professed systematist might almost form as many genera as there are species. However, Bats have such distinct external characters, that it is totally unnecessary to have recourse to the more latent marks in order to ascertain their definitions.

BAT, BULL-DOG. The length of the body of this animal is little more than two inches; and the extent of the wings nine inches and a half. It has broad round ears, the edges touching each other in front; the nose is thick; the lips are pendulous; and the upper part of the body is of a deep ash-colour, the lower part being pale. The tail is long in proportion to the magnitude of the animal, and the five last joints of it are disengaged from the skin or membrane.

BAT, SENEGAL. This animal measures about four inches from the nose to the rump; and the extent of the wings is nearly twenty-one inches. It has a pointed nose; a long head; and short and pointed ears. The head and body are of a tawny brown, mixed with ash-colour; but the belly is somewhat paler: and the two last joints of the tail extend beyond the membrane. It is a native of Senegal, from which it receives it's name.

BAT, POUCH. This creature is only an inch and a half long; the nose is somewhat elevated; the chin is divided by a furrow; the ears are long, and rounded at the extremities; and on each wing, near the second joint, there is a small pouch or purse. The tail is partly involved in the membrane, and partly projects. The body is of an ash-coloured brown; and the belly is somewhat paler. This species inhabits Surinam.

BAT, BEARDED. This species, which is small, is distinguished from all others of the Bat tribe by having hair on it's forehead, and very long hair under it's chin. The nostrils are open a considerable way up the nose; the ears are long and narrow; the upper part of the head and body are of a reddish brown; the lower parts are of a dirty white, tinged with yellow; and the tail is included in a membrane extremely full of nerves. This creature is a native of North America.

BAT, NEW YORK. The length of this animal, from the nose to the tail, is ten inches and a half; the tail is one inch and three quarters; and the extent of the wings is ten inches and a half. The head is shaped like that of a mouse; the ears are short, broad, and rounded; it has two canine teeth in each jaw, but no cutting teeth; and it's tail is inclosed in a membrane of a conical shape. The head, the body, and the whole upper side of the

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membrane inclosing the tail, are covered with long and very soft hair of a bright tawny colour, but lightest on the head and on the beginning of the back; the belly is more pale; at the base of each wing there is a white spot; the wings are thin, naked, and dusky; and the bones of the hind-legs are very slender. This species inhabits New Zealand, and several of the North American provinces.

BAT, STRIPED. This animal is an inhabitant of the Island of Ceylon, where it is called kinwoula. It has a small short nose; the ears are broad, short, and pointing forwards; and the upper part of the body is of a clear reddish brown, the lower part being whitish. The wings are striped with black, and sometimes with tawny and brown. The length of this animal, from the nose to the insertion of the tail, is about two inches.

To this species of Bat may be referred another minute kind seen in great numbers in the New Hebrides: but which eluded every attempt of our late voyagers to obtain a specimen.

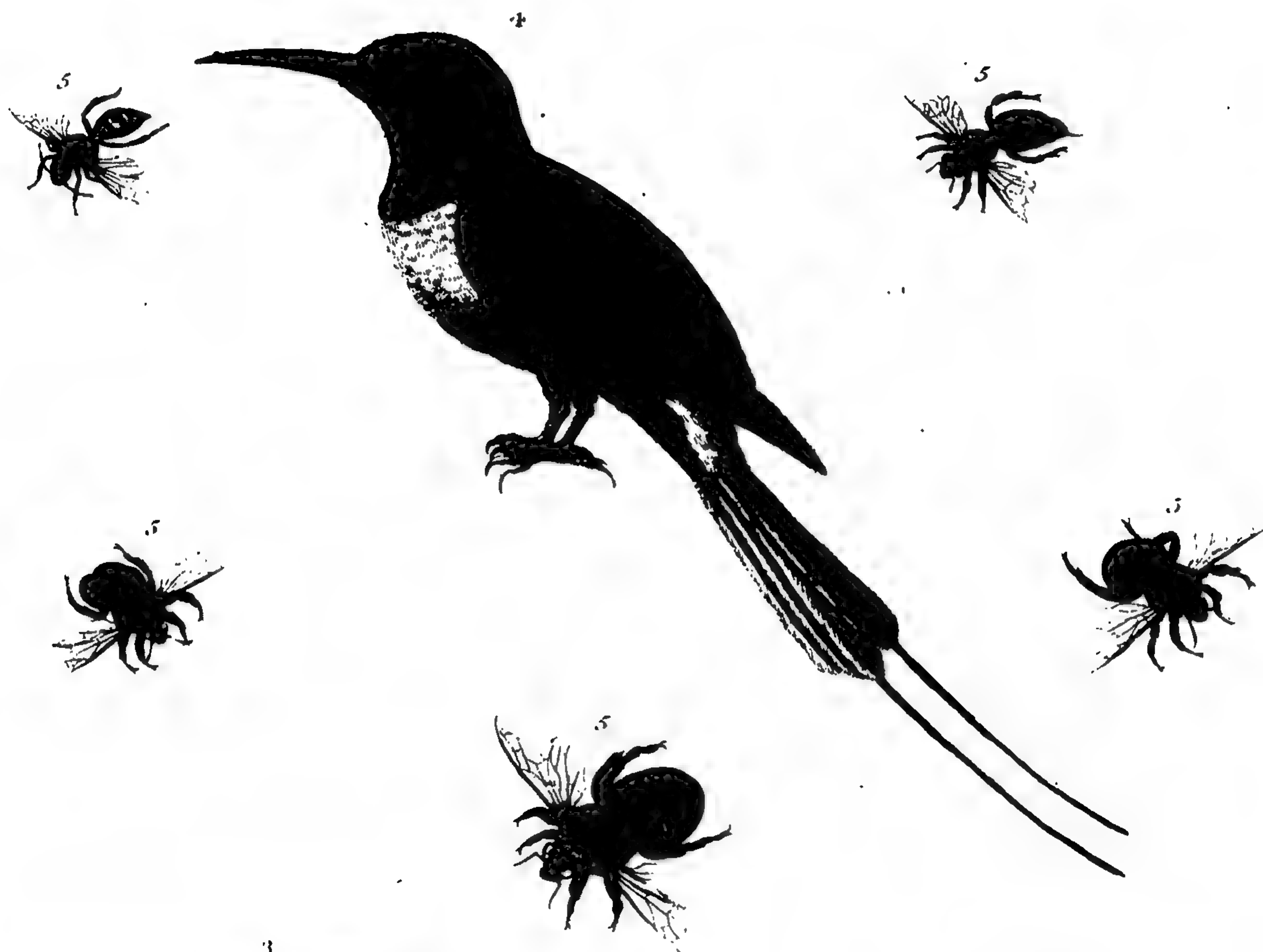
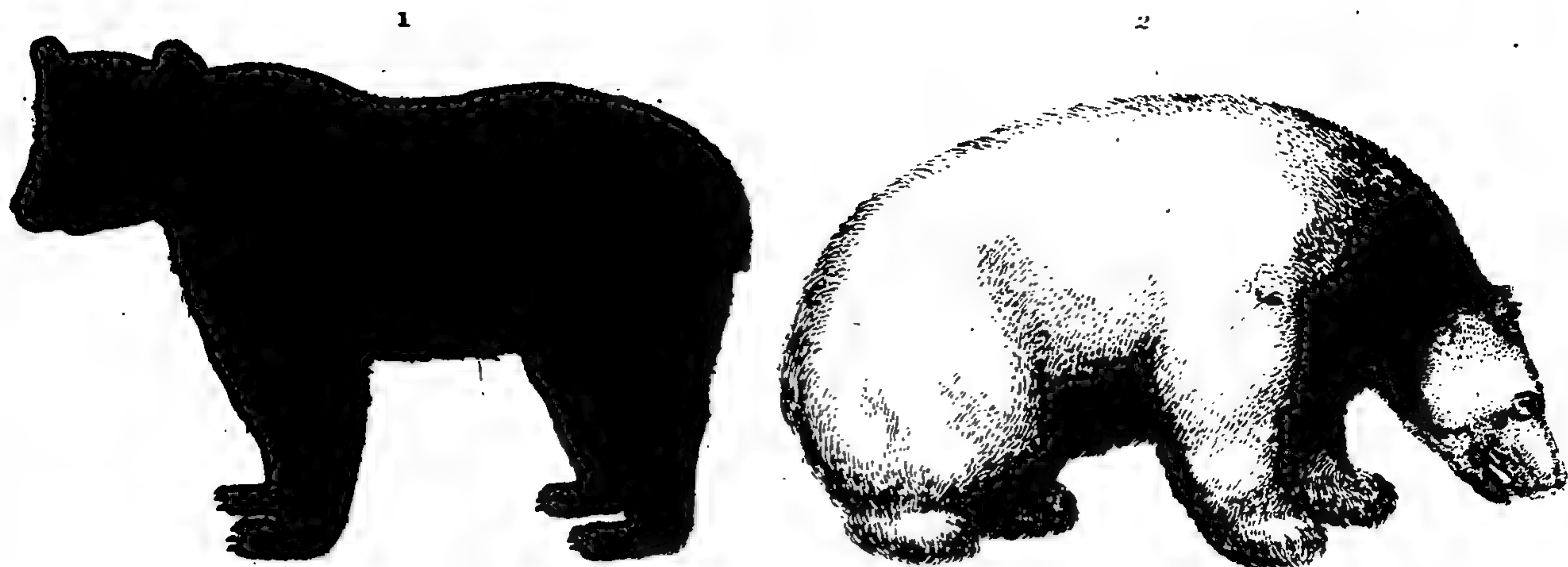
BAT, MOLUCCA. This animal, from the nose to the rump, measures about three inches and three quarters; and the extent of the wings is about fifteen inches. It has a large head; a thick nose; small ears; and tubular nostrils. The upper lip is divided; the tongue is covered with a number of papillæ and minute spines; the claw is united with the wing by a membrane; the first ray of the wing is terminated by a claw; and the extremity of the tail reaches beyond the membrane. The head and back are of a darkish ash-colour; and the belly is a dull white. This species seems peculiar to the Molucca Isles.

BAT, HORSE-SHOE. There is a greater and a lesser variety of this animal: the greater is about three inches and a half long from the nose to the tip of the tail, and the extent of it's wings is about fourteen inches. It has a membrane at the end of the nose, shaped like a horse-shoe. The ears are large, inclining backwards, broad at the base, and sharp-pointed; but it is destitute of the little or internal ear. The upper part of the body is of a deep ash-colour; the lower part is whitish; and the tail is inclosed in the membrane. It inhabits the province of Burgundy, in France; and has lately been discovered in some parts of Kent.

BAT, NOCTULE. The length of this Bat is almost three inches; the tail is nearly two; and the extent of the wings is thirteen. The ears are small and rounded; and the chin is marked with a minute verruca. The hair of this animal is of a reddish ash-colour. It inhabits Great Britain and France; and never skims near the ground, but flies high in pursuit of it's prey.

BAT, SROTINE. This Bat is about two inches and a half long from the nose to the rump. It's nose is oblongated; it's ears are short, but broad at the base; and the hair on the upper part of it's body is brown mixed with ferruginous, that on the belly being somewhat paler. It is a native of France; but is likewise found in the caverns of rocks in some of the most remote parts of Russia.

BAT, PIPISTRELLE. This seems to be the least of all the Bat tribe; being no more than an inch and a quarter long; and the extent of the wings about six inches and a half. The nose is small; the upper lip is slightly prominent; the ears are broad; the forehead is covered with long hair; the colour of the upper part of the body is a yellowish brown, the lower being dusky, and the lips are yellow. It is found



1. BROWN BEAR 2. WHITE BEAR 3. BEAVER
4. INDIAN BEE EATER 5. BEES 6. FISH

found in France, and in the rocky and mountainous parts of Russia and Siberia.

BAT, BARBASTELLE. This animal is about two inches long, and the extent of it's wings is ten inches and a half. The forehead is depressed; the ears are long and broad; the nose is short, and flattened at the end; and the cheeks are full. The upper part of the body is of a dusky brown colour, and the lower is ash-coloured and brown. It is a native of France.

BAT, LONG-EARED. The body and tail of this animal are only one inch and three quarters long; the ears, which are upwards of an inch long, are thin, and almost pellucid; and, like all other Bats, except the horse-shoe and the ternate, it is furnished with an internal or lesser ear, serving as a valve to close the greater when the animal is asleep. It is a general inhabitant of Europe, and of Great Britain in particular.

BAT, SEA. This curious fish is about eight inches long, and nearly of the same breadth: two large spines proceed from the under-jaw; there are two large fins resembling wings on the back and belly; and the tail-fin is like that of a dorado. The Sea-Bat is wholly of a dark brown or dusky colour. The skin on the back, and all round it's sides, is rough like shagreen, intermixed with some larger pointed risings; but that of the belly is smoother and softer.

There is another species of Sea-Bat which has a head like that of a toad; the fins very much resemble the wings of the land-animal of this name; and the tail is long, and somewhat like that of a sharp-snouted ray.

They are both natives of the Brazils and the West-Indian seas.

BATACHOSALIS. A name given by many of the ancient Greek authors to the lophius, or rana piscatrix, of the modern naturalists.

BATIS. See **BATOS** and **RAIA**.

BATOS. The name given by Aristotle and the ancient naturalists to the skaite, or flaire. They have generally called the male, Batos; and the female, batis. It is a species of the raia; and is distinguished by Artedi under the name of the variegated ray, with the middle of the back smooth, and with one row of spines on the tail. Albertus gives it the title of the rayte and rubus.

BATRACHUS. A species of the silurus, a genus of fishes.

BAVOSA. An Italian name for a species of the ray-fish, called by modern authors levi-rayia, and raia oxyrynchus; and, by the earlier writers, raia bos, bos marinus, and leioraia. It is described by Artedi under the name of the variegated ray with ten prickly tubercles on the middle of the back.

BEAGLE. A sort of hound, or hunting-dog. Beagles are of several kinds; as the southern Beagle, somewhat less and shorter, but thicker than the deep-mouthed hound; the fleet northern or cat Beagle, small, and a more fleet runner than the southern; and from these two, by crossing the strains, is bred a third sort, esteemed preferable to either. To these may be added a still smaller species, scarcely bigger than the lap-dog, which afford excellent diversion in rabbit-hunting; but are otherwise unserviceable, on account of their size.

BEAN-FLY. A very beautiful insect of a pale purple colour, frequently found on bean-flowers, and produced from the worm or maggot called mada by naturalists.

BEAR. A well known quadruped of the cat

kind, which, in the Linnæan system, makes a distinct genus of fere, or wild-beasts. The distinguishing characters of the Bear are, that it has six fore-teeth, both above and below, the upper ones being alternately hollow within; the cutting teeth are single, and conical; the grinders are five or six in number; the tongue is smooth; and the nose is prominent. There are several different species of Bears; such as the black Bear of North America, the smallest of the genus; the brown Bear of the Alps; the great Greenland, or white Bear; and the Kamtschatka Bear: but all of them, though different in size and form, are unquestionably of the same original, and owe their principal variations to food and climate.

BEAR, AMERICAN BLACK. This animal has a long head; small eyes, and short ears rounded at the top. It's nose is long and pointed, and of a yellowish brown colour; it's limbs are strong, thick, and clumsy; and it has a short tail, with large feet. The hair on the body and limbs is black, smooth, and glossy: and it is said to be mild and shy in it's disposition, subsisting only on vegetables, particularly maize and potatoes, of which it is remarkably fond. Du Pratz says that the Bear will even reject animal food, though pressed by hunger: but Dr. Goldsmith affirms the contrary; declaring that he has often observed the young ones, when brought over to England, prefer flesh to every kind of vegetable aliment.

These animals strike with their fore-feet like a cat; and very seldom make use of their tusks, but seize their assailants with their paws, and press them against their breasts so as almost instantly to squeeze them to death. The females, after conception, retire into some secret place, lest the males should destroy their cubs when they are littered: and so impenetrable are their retreats, that, though several hundreds of Bears are killed annually in America during the winter, hardly a single female is ever found among them. They bring forth two, and sometimes three at a time; and though their cubs are certainly very deformed, they are not so shapeless as has been sometimes pretended. The flesh of Bears, in autumn, when they are become exceedingly large by feeding on acorns and other arborescent food, is extremely delicate; and the fat, which preserves a certain degree of fluidity, is remarkably white and sweet. After fattening itself to a very great degree, the Bear retires to it's den, where it continues forty or fifty days in a state of total inactivity and abstinence from food: but, at the end of that period, being forced from it's retreat by hunger, it comes forth in quest of fresh nourishment evidently much emaciated. It is a mere vulgar error to suppose that, during this time, the Bear subsists by sucking it's paws; since it rather lives on the exuberance of it's former flesh, and only feels the calls of appetite when the fat it had acquired in summer becomes almost exhausted. The Bear retreats either to the cliffs of rocks, the deepest recesses of the most impervious woods, or to the hollows of decayed trees, which it ascends and descends with surprizing agility. Multitudes are killed annually for their flesh and skins, both of which are valuable; and the latter, in particular, forms a considerable article of commerce.

BEAR, BROWN. This creature, except in size and colour, almost entirely resembles the former. It is not only savage, but solitary. It destroys cattle, and feeds on carrion; however, it's general food is roots, fruits, and vegetables. It plucks up

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great quantities of peas; and, beating them out of the shells on some stone or hard spot of ground, eats the peas, and carries off the straw. In winter, when vegetable food begins to grow scarce, it often breaks into farmers' yards, and makes terrible havock among their oats.

The voice of the Brown Bear (and, indeed, of every other species) is a kind of growl; and though, when tamed, it appears gentle and placid to its owner, it should nevertheless be cautiously managed, being often capricious, treacherous, and vindictive. Though apparently stupid and awkward in the extreme, it is not altogether indocile. There are few persons, perhaps, who have not seen it dance on its hind legs; though its air and motion are proverbially ungraceful.

After the Bear arrives at maturity, it becomes incapable of being tamed; but, notwithstanding its ferocity, the natives of those countries which it inhabits hunt it with great alacrity. The most general and least dangerous method of catching Bears, is by throwing brandy on honey, which they eat with avidity, and thus become intoxicated. In Canada, where Bears are numerous, as they commonly take up their lodging in trees rendered hollow towards the top by age, they are taken by setting fire to these retreats, which are frequently from twenty to thirty feet from the ground. The old Bear generally ventures first out of its den, and is shot by the hunters; and the young ones, as they descend, are caught in snares.

BEAR, WHITE. This species has a long head and neck; short round ears; large teeth; and limbs of vast size and strength. The hair is long, soft, and white; being tinged in some parts with yellow. The length of the White Bear is frequently thirteen feet; and it seems to be almost the only animal which, by being placed in the arctic regions, grows larger than those of temperate climes. All other species of animated nature, as they approach the poles, seem to diminish in size, through the rigours of the surrounding atmosphere; but the Bear, unmolested in these desolate climes, and meeting with no opponent more powerful than itself, grows to an enormous size: and, as the lion is the tyrant of the African forests, so the Bear sways his rude sceptre over the icy mountains of Greenland and Spitzbergen.

When our mariners land on the unfrequented parts of those gelid coasts, the White Bears come down to view them: they approach slowly, seemingly undetermined whether to advance or retreat; and, being naturally timid, they are urged on to attack their enemies only by a consciousness of their superior strength. When shot at, however, or wounded, they attempt to fly; or, if they find that impracticable, they make a fierce and desperate resistance.

These animals live on fish, seals, the carcases of whales, and even on human bodies; which last they often greedily dig out of their graves. Delighting in human blood, they are sometimes so daring as to attack companies of armed men, and even to board small vessels. During the summer season, they reside on the islands of ice, frequently shifting from one to another. Being excellent swimmers, they dive with great agility; in which act battles sometimes ensue between them and the morse or the whale; in which the whale is generally victorious, being the most expert of the two in its own element. If the Bear, however, is fortunate enough to find a young whale, it in general

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amply repays itself for the danger incurred by meeting with the parent.

The mutual affection which subsists between the female White Bear and its young is so strong, that they will rather die than desert each other; and history furnishes us with several remarkable instances, where the maternal love displayed by this animal has been at once extraordinary and affecting.

This creature seems to be entirely confined to the coldest regions of the globe; for it does not appear, from any respectable authority, to be met with any farther to the southward than Newfoundland. Such Bears as have appeared in more temperate latitudes have been involuntarily carried thither on floating islands of ice; so that the countries of Norway and Iceland can only be acquainted with them through accident.

The flesh of this animal is white, and tastes like mutton. Its fat is melted for train oil; and that extracted from its feet is used in medicine. The liver is said to possess poisonous qualities.

A few years since, one of this species was publicly exhibited in England. It appeared very furious; roared loud; and seemed constantly uneasy, except when cooled by large quantities of water poured over it.

Land-Bears, spotted with white, and at other times wholly white, have sometimes been observed, in a wandering state, in those parts of Russia which border on Siberia; and are probably such as have strayed out of the lofty snowy mountains which divide the two countries.

BEAR, KAMTSCHATKA. The Bears of Kamtschatka are neither large nor fierce; never attacking the inhabitants, unless they find them asleep, and then seldom killing them, though they frequently tear the scalp from the back part of their heads; and, when fiercer than ordinary, lacerate some of the fleshy parts, but never eat them. The people who have been thus wounded are called Dranki, and are frequently met with. It is remarkable, that the Bears of Kamtschatka, though so numerous as to cover the fields like cattle in summer, never hurt women; but go about with them like tame animals, especially when they gather berries. Sometimes, indeed, the Bears eat up the berries which the women have gathered; but that is the sole injury they ever offer them.

In the season when the fish enter the mouths of the rivers in vast shoals, great numbers of Bears come down from the hills, and settle in proper places for catching them; which they do in such profusion, that they only eat and suck the bones of the heads, neglecting the bodies: but when this plenty ceases, they are glad to gnaw the bones which they formerly despised. They frequently steal fish from the fishing-huts of the Cossacks, though there is always a woman left to watch them; and to her, indeed, they never do any hurt.

Before the introduction of fire-arms, the people of Kamtschatka used many devices for killing the Bears. Among others, the following seem most worthy of notice. Having cut several billets of wood, they stopped up the mouth of the den with them; these the Bear never failed to draw in, that his passage from his den might not be shut up. This they continued doing till he was so straitened in his den, that he could not turn himself; they then dug down from above, and killed him with their spears. The Koreki, in order to catch the Bear, seek out some tree that is crooked above, on which they fasten a snare, and behind it place some

some proper bait; which the animal endeavouring to seize, is held fast by the head or paw. Sometimes they place heavy logs of wood in such situations as will make them fall with the slightest touch, so as to crush the Bear beneath their weight. Another method is, to lay a board driven full of iron hooks in the Bear's track, near which they place something that easily falls down; and this terrifying the Bear by it's fall, he runs on the board with great force, and finding one fore-paw wounded, and seized by the hooks, he endeavours to free himself by beating the board with the other: both being thus fixed, he rests on his hinder-legs, which occasion the board to rise before his eyes, and perplex him in such a manner, that he soon becomes furious, and beats himself to death. The people about the Rivers Lena and Ilimé have a very odd method of catching them. They place a noose on the Bear's track or entrance to his den; fastened at the end to a large log of wood: when the Bear finds himself entangled, and feels that the log prevents his walking easily, he takes it up, and carries it to some precipice, from whence he throws it down with great force, and of course falling with it, is violently bruised. However, he fails not to repeat this practice, till in the end he kills himself.

From the month of June to the end of harvest, these Bears are very fat; but, in the spring, they are lean and dry. In the stomachs of those killed in the spring, nothing is found but a frothy slime.

BEAVER. This animal is far less remarkable for the singularity of it's conformation, than for the intellectual powers it is observed to possess. It is the only quadruped which has a flat, broad tail, covered with scales, serving as a rudder to direct it's motion in the water. It is the only quadruped, also, which is furnished with membranes between the toes of the hind-feet solely, which supply the place of hands, as in the squirrel tribe. It is, still farther, the only animal that, in it's fore-parts, entirely resembles a quadruped; and, in it's hinder-parts, seems to approach to the nature of fishes, by having a scaly tail. In other respects, it's length, from the nose to the tail, is about three feet; it's tail is eleven inches long, and three broad; and the animal is somewhat like a rat. It has strong cutting teeth; short ears, almost hid in the fur; and a blunt nose. The hair is of a deep chestnut-brown, and composed of two sorts: the one long and coarse; and the other short, soft, fine, and silky. Like birds, it has but one vent for it's natural evacuations; a peculiarity in it's conformation of which we should be inclined to doubt, did not the most celebrated naturalists concur in it's support.

The Beaver seems to be the only remaining monument of brutal society. In all countries where man is civilized, the lower ranks of animals, as Buffon judiciously remarks, are repressed and degraded. Either reduced to servitude, or treated as rebels, all their societies are dissolved, and all their united talents rendered ineffectual; their feeble arts have quickly disappeared; and nothing but their solitary instincts, or those foreign habits which they have received from human education, can now be traced.

The Beaver, from the effects of it's labours, which are still to be seen in the remote parts of America, may teach us how far instinct may be aided by imitation. From thence we may also perceive to what a degree animals unassisted either

by language or reason, are capable of concurring for their mutual benefit; and of attaining, by dint of numbers; those advantages which each, in a state of solitude, seems unfitted to possess. Viewing the Beaver only in the light of an individual; and unconnected with others of it's kind; we shall find that many other quadrupeds excel it in cunning, and almost all in the powers of annoyance and defence. The Beaver, when kept in a state of solitude or domestic tameness, appears to be a mild, gentle creature; familiar, but dull even to melancholy; without any violent passions or appetites; moving but seldom; making very few efforts to regain it's freedom; calm; and indifferent to all about it; without attachments or antipathies; and never seeking to conciliate the favour of man; nor aiming at offending him. In those qualities which render animals serviceable to man; the Beaver appears inferior to the dog: it seems neither formed to command nor to serve; and is only adapted to live among it's own kind. Thus the talents of this creature are entirely repressed in solitude, and are only brought to light by it's being placed in society. When accidentally detached from it's companions, it neither exhibits industry nor cunning, and appears incapable of guarding itself from the most obvious and inartificial snares of the hunters. Far from attacking any other animal, it scarcely possesses the arts of defence; and, preferring flight to cunning, like all other wild animals, it only resists when driven to extremity, and when it's speed can no longer avail.

About the months of June and July, the Beavers begin to assemble in great numbers, and to form a society, generally consisting of more than two hundred, which continues during the greatest part of the year. The place of their rendezvous, which is always near the margin of some lake or river, is commonly made the scene of their future action. If the waters are always on a level, they dispense with building a dam; but if they are subject to floods and falls, they then set about erecting a pier over the river or lake, so as to form a kind of dead water in those parts which lie above and below it. This dam, or pier, is often fourscore or a hundred feet long, and ten or twelve feet thick at the base. If we compare the greatness of the work with the powers of the architects, it will appear enormous. But the solidity with which it is built is still more astonishing than it's extent: it is usually formed in the most shallow part of the river, and where some great tree overhangs the stream, which they pitch upon as the principal stay to their fabric; and, though it is often thicker than a man's body, they instantly set about hewing it down with their teeth; and soon level it on the very side on which they wish it to fall, which is always across the stream. They then proceed to cut off the top branches, in order that the tree may lie close and even, and serve as the principal beam of the building. The dyke, or pier, descends with a slope on that side next the water; which gravitates on the work in proportion to it's height, pressing it with a prodigious force towards the earth. The opposite side is erected perpendicularly; and that declivity, which at the base is about twelve feet broad, diminishes till it terminates in a breadth of only two feet.

Wood and clay are the materials of which this mole consists. The Beavers cut, with surprising expedition, pieces of wood, nearly as thick as a man's arm, and five or six feet long, according as the slope ascends; and these they drive into the ground at a small

small distance from one another, intermingling with them others which are smaller and more pliant. Left the water, however, should find a passage through the intervals or spaces between them, and leave the reservoir dry, they have recourse to a particular kind of clay, with which they stop up all the crevices, both within and without. They then continue to raise the dyke in proportion to the elevation of the water, and the quantity they wish to confine; and being conscious that the conveyance of their materials by water is more easily effected than by land, they avail themselves of the current of the stream, and swim with their mortar on their tails, and their stakes between their teeth. If the Beavers find their works in the least damaged by the violence of the water, or by the feet of the huntsmen, every part of them is narrowly inspected, and the breach perfectly repaired with the utmost diligence and application. But when the hunters intrude too often, the animals either work during the night, or entirely abandon their fabric, and seek a more retired situation. When the Beavers have thus far completed their habitation, their next care is to erect their several apartments, which are either round or oval, and divided into three stories, raised one above another; the first, which is that below the level of the causeway, being for the most part full of water. These little cottages, which are built in a very firm and substantial manner on the edge of the reservoir, are always in the form above-mentioned; that, in case of the water's increase, they may have a higher retreat to fly to. If they find any little island contiguous to their reservoir, they there fix their mansion; such a situation being not only more solid, but less liable to be overflowed: but if they cannot pitch on such a commodious spot, they fortify their habitations with piles, as a defence against the wind as well as the water. At the bottom are two inlets to the stream; one consisting of a passage to their bath, which is always kept neat and clean; and the other leading to that part of the structure into which every thing is conveyed which can either soil or damage their upper apartments. They have likewise a third opening or door-way, considerably higher, contrived for the purpose of preventing their being shut up by any external accident, when frost and snow have closed the apertures of the lower floors.

In the construction of their lodgings, the Beavers make use of the same materials as in their dykes. The walls of the former are about two feet thick, and raised perpendicularly. They cut off with their teeth, in a very neat manner, all those parts of the wood which project beyond the wall; and then, having mixed some clay and withered grass together, they work them up into a kind of mortar, with which, by the help of their tails, they plaister all their works both internally and externally. The insides of their habitations, which are vaulted, are sufficiently capacious for the reception of eight or ten Beavers; and, when constructed in an oval figure, they are generally twelve feet long, and eight or ten feet broad. If the number of inhabitants increases, the edifice is proportionably enlarged: and we are credibly informed, that four hundred Beavers have sometimes been discovered residing in one large mansion-house, divided into a vast number of apartments, but at the same time preserving a free communication with one another.

In the more northern climates, the habitations of these animals are finished in August, or early in September; when they begin to lay in their stores.

During the summer months, they regale themselves every day on the choicest fruits and plants the country affords; and give themselves up to a species of epicurism: but, in winter, they subsist principally on the wood of the birch, the plane, and some other trees, which they steep in fresh-water from time to time, in quantities proportioned to the number of inhabitants. The branches they use for food are frequently ten feet long; those of the largest dimensions are conveyed to their magazines by a whole troop of Beavers; but the smaller sorts can generally be managed by one. Each of them, however, takes a different way; and has his own proper walk assigned him, in order that one may not interrupt another in the prosecution of his labour. Their wood-yards are larger or smaller in proportion to the number in a family: and, according to some curious naturalists, the usual stock of timber for the accommodation of ten Beavers, consists of about thirty feet in a square surface, and ten in depth. These logs are not thrown up in one continued pile, but laid across each other, with intervals between them, in order that such quantities only as are wanted for immediate consumption may be come at with the greater facility. This timber is again cut into small particles, and conveyed to one of their largest lodges, where the whole family meet, in order to consume their respective allotments, which are divided in a very impartial and equal manner. Sometimes, however, they venture into the woods; and at such seasons they have an opportunity of regaling themselves and their young with more acceptable food.

Those who are accustomed to hunt these animals, being perfectly aware that green wood is much more grateful to them than that which is old and dry, place a considerable quantity round their lodgments; and, when they sall forth to seize it, either catch them in snares, or take them by surprise. When the frosts are very severe, the hunters sometimes break large holes in the ice; and, on the Beavers resorting to these apertures to breathe the fresh air, they either kill them with their hatchets, or cover the holes with large substantial nets. This being done, they undermine and subvert the whole fabric; when the Beavers, expecting to make their escape in the usual way, fly with precipitation to the water; and, rushing to the opening, fall directly into the net.

Besides the associated Beavers, there is another sort called terriers; destitute of either industry or sagacity to construct habitations like the former. These burrow in the banks of rivers, making their holes beneath the freezing depth of the water, and working up for a great number of feet.

The skins of Beavers, which form a very lucrative article of commerce, are distinguished under the appellations of coat Beaver, parchment Beaver, and stage Beaver: the first is used by the Indians for coverlets; the second obtains its name from the resemblance which the lower side bears to parchment; and the third is what the Indians kill out of season, on their stages or journies.

From the inguinal gland of the Beaver is taken that valuable drug called castoreum. The Russian castoreum is so much preferable to the American, that the former is sold for two guineas a pound; whereas the latter is worth no more than eight shillings. It is esteemed an excellent medicine in all nervous disorders; particularly in hysteric fits, and the general train of feminine complaints.

Beavers inhabit Europe from Lapland to Languedoc;

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guedoc; they abound in the north; and they are sometimes seen in the Rhone, the Garrone, the Danube, the Rhine, and the Vistula. They are also found in great plenty in the Russian Asiatic dominions; but they are by far the most numerous in North America. Their flesh, when preserved by being dried in the smoke, is esteemed very delicious; but their tails are reckoned the most savoury parts.

BEAVER, MUSK. The Musk Beaver has a thick obtuse nose; large eyes; and short ears, which are almost hid in the fur. The toes on each foot are separated, the hind ones being fringed on each side with strong hair closely set together; the tail, which is compressed side-ways, is very thin at the edges, and covered with scales intermixed with a few hairs; the head and body are of a reddish brown colour; and the breast and belly are ash-coloured tinged with red. The length of the body, from the nose to the tail, is about twelve inches; that of the tail is about nine inches; and the whole figure exactly represents the common Beaver in miniature.

The Musk Beaver is a native of North America; and breeds three or four times a year, bringing forth from three to six at a time: the male and female consort together during the summer; and when winter approaches, the animals unite their families, and retire into small round edifices covered with domes composed of plants and reeds cemented with clay. At the bottoms of these buildings there are several conduits, through which they pass in search of food; and for this they have daily occasion, as they possess none of the provident foresight of the common Beaver. Their habitations, during the winter season, are covered many feet deep with snow and ice; but they frequently creep out, and feed on the roots which lie beneath. They erect new habitations every year, and desert their old ones.

The fur of this animal is very soft, and much valued; and its flesh has an exquisite musky smell during the summer season.

BEAVER, SEA. This animal has not the smallest resemblance to the common Beaver; but was at first so called merely from the downy softness of its hair. It is as large as the sea-cat: its shape resembles that of the seal, excepting its head, which is like that of a bear; its fore-feet are longer than its hind-feet; its teeth are small; its tail is short and flat, and sharp towards the point; and its hair is thick, and black as pitch: that of old Beavers is grey; and that of young ones is long, brownish, and remarkably soft.

This is the most peaceable of all sea animals; for it never makes any resistance, but only endeavours to save itself by flight. The females are very affectionate to their young, and carry such as cannot swim on their bellies between their fore-feet; for, till the little ones are capable of swimming, the mothers swim on their backs. When the fishermen pursue them, they never quit their offspring till the very last extremity; and, if they happen to let them slip, presently return to the place from whence their cries are heard.

There are three ways of catching Sea-Beavers: first, by nets placed among the sea-cabbage, whither the animals retire in the night-time, or during storms; secondly, by chasing them in boats; and, thirdly, by killing them on the ice.

BECASSINE. A name given by several naturalists to the *tringa minor*; or, as it is usually called with us, the sand-piper.

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BECCIFAGO. A small bird which feeds on vegetables, berries, and other fruits; and is commonly seen in the north of England, where it obtains the name of the petty-chaps. It is scarcely so large as the common linnet; and is remarkable for the shortness of its body. Its head, neck, back, wings, and tail, are generally of a greenish grey; but, in some, it is of a greenish brown.

BECUNE, or, WEST-INDIAN SEA PIKE. This fish bears a strong resemblance to the river pike, except that it is considerably larger, being sometimes eight feet long. It possesses very voracious appetites; and is extremely dangerous in its own element, because capable of biting with more facility than the shark. Its flesh has the same taste as that of the fresh-water pike: but there is much danger in eating it; for, unless the teeth appear white, and the liver retains a sweet smell, it is highly deleterious.

BEE. A well-known insect; the history and œconomy of which, though they have engaged the study of naturalists, at different periods, for a series of near two thousand years and upwards, are still but imperfectly ascertained. Reaumur, indeed, who spent a great part of his life in the contemplation of this little animal, has furnished us with a description sufficiently minute: but, hurried away by an enthusiastic admiration of the subject of his researches, he has ascribed qualities and habitudes to this curious race which most naturalists are now apt to consider as extravagant.

It is certain that every hive is composed of three different sorts of Bees. The first sort consists of those called labouring Bees, which are by far the most numerous, and are generally regarded as neutral, being neither male nor female, but apparently produced for the purposes of labour, and for supplying the young Bees with provisions while in an adolescent state. The second sort is that called drones; which are of a darker hue, as well as larger, and longer by a third, than the former: and of these, which are supposed to be the males, there is seldom above one hundred in a hive consisting of several thousands. The third sort, which is that called queen Bees, and who are said to lay all the eggs from which the whole swarm is hatched, is much larger than either of the former, and still less plentiful: some naturalists have asserted, that there is only one in each swarm; but later enquirers into the œconomy of Bees affirm that there are frequently five or six.

If we examine the structure of the common Bee, the first remarkable part which presents itself is the trunk, an instrument serving to extract honey from flowers: it is not formed, like that of other flies, in the shape of a tube, by which the fluid is to be sucked up; but rather like a tongue, to lick it away. The insect is also furnished with teeth, which assist it in making wax: this substance, which is collected from flowers, like honey, consists of that dust or farina which contributes to the fecundation of plants, and is moulded into wax at leisure. Every Bee, when it leaves the hive in quest of this precious store, enters into the cups of such flowers as seem to be charged with the greatest quantities of yellow farina. As the body of the animal is entirely covered with hair, it rolls itself within the flower, and soon becomes entirely enveloped in this dust, which it afterwards brushes off with its two hind-legs, and kneads into two little balls. In the thighs of its hind-legs there are two small cavities, edged with hair; and

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into these the animal sticks it's pellets. Thus employed, the Bee flies from flower to flower, increasing it's store of honey, and adding to it's stock of wax, till the ball on each thigh becomes as big as a grain of pepper; after which it intermits it's labour, and returns to it's hive.

The belly of the Bee is divided into six annulations or rings, which are capable of being contracted or expanded at pleasure. Besides the intestines, the insect is internally furnished with a honey-bag, a venom-bag, and a sting. The honey-bag, which is as transparent as crystal, contains the honey which the Bee has brushed from the flowers, the greatest part of which is carried to the hive, and poured into the cells of the honeycomb, while the remainder serves for the animal's own nourishment; for, during the summer season, it never touches it's winter's hoard. The sting of this industrious creature, which is imparted to it by nature as a defence against it's enemies, is composed of three parts; namely, the sheath, and two extremely small and penetrating darts; and both these darts are furnished with several points, or barbs, like those of a fish-hook, which rankling in the wound, render the sting more painful. This instrument, however, would prove but a weak defence, if the Bee did not poison the wound. The sheath, by means of it's sharp point, makes the first impression; and this being followed by that of the darts, the venomous fluid is speedily injected. The former weapon sometimes sticks so fast in the flesh, that it is obliged to be left behind, and the wound is thereby much enflamed; but the Bee does not long survive it's loss.

From examining the Bee singly, we proceed to an enquiry into it's habits in society; and, in this view, we behold an animal active, vigilant, laborious, and disinterested: subject to regulations, and perfectly submissive. All it's provisions are laid up for the community; and all it's arts are employed in building a cell, designed for the benefit of posterity.

The substance of which the cells of Bees are formed consists of wax, fashioned into convenient apartments for themselves and their young. When they begin to work in their hives, they divide themselves into four companies: one of which traverses the fields in quest of materials; another is occupied in laying out the bottoms and partitions of their cells; a third is employed in smoothing their insides from any remaining asperities; and the fourth company either brings food for the rest, or relieves those who return with their respective burdens. They are not, however, uniformly fixed to the same avocations, but frequently change the tasks assigned them: those who have been at work in the hive being permitted to go abroad, while those who have been in the fields are called upon to supply their places. They even seem to have signs by which they understand each other: for when any one of them wants food, it bends down it's trunk to the Bee from whom it is expected; which immediately opens it's honey-bag, and lets some drops fall into the other's mouth, which is opened on purpose to receive them.

Such is the astonishing and unwearied diligence of these creatures, that, in one day's time, they are capable of constructing cells sufficiently numerous to contain three thousand Bees; and which, if examined, will be found to be formed in the most exact proportion. Pappus, an ancient

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geometrician, informs us that, of all other figures, hexagons are the most convenient; for when placed so as to touch each other, the most commodious room will be given, while the least possible will appear to be lost. The cells of the Bees are perfect hexagons; and these, in every honeycomb, are double, opening on either side, and closing at the bottom. The bottoms are composed of little triangular panes; which, when united together, terminate in a point, and lie exactly upon the extremities of the upper panes of the same shape, but in opposite cells. These lodgings have spaces resembling streets running between them, large enough to give the Bees a free passage in and out, and yet narrow enough to preserve the necessary degree of heat. The mouth of every cell is defended by a border, which, though it renders the entrance somewhat less than the inside of the cell, serves to strengthen the whole fabric. Their cells answer very different purposes, being at once the repositories for their wax, their honey, and their young.

It is universally allowed, that the habitations of Bees ought to be very close: and what their hives want in this respect, owing to the negligence or unskilfulness of man, these animals are sure to supply by their own industry; so that, when first hived, it is their principal care to stop up every chink. For this purpose, they make use of a resinous gum, more tenacious than wax, and of a very different nature. This gum, which the ancients called propolis, grows pretty hard, but is nevertheless capable of being in some measure softened by the heat: it is often found to vary in consistence, colour, and smell; it has generally, however, an agreeable aromatic odour when warmed, and some persons consider it as a most grateful perfume. When the Bees begin to work with this material, it is extremely soft; but, acquiring a firmer consistence daily, it at length assumes a brown colour, and becomes fit for every purpose intended. Some have supposed this gum to be expressed from the willow, the birch, and the poplar; but, whatever may be the resources from which it is drawn, the hives of the Bees are all internally plastered with this composition.

From the hurry and bustle the swarm seems to be in, when examined through a glass hive, the whole at first sight appears like anarchy and confusion; but the spectator, on a closer inspection, soon discovers every animal sedulously employed, and following one pursuit with a settled purpose.

The teeth of the Bees are the instruments by which they model and fashion their various buildings with such astonishing symmetry and perfection. They begin at the top of the hive, and several of them are employed at one time in constructing the double-faced cells.

The formation of their combs, which is attended with infinite labour, is completed by insensible additions; and not cast at once in a mould, as some have idly imagined. The cells for their young are most carefully formed; those designed for lodging the drones are larger; and that meant for the queen Bee is the largest of all. It is evident that these apartments also serve at different times as storehouses for honey. Every worm, before it is transformed into an aurelia, suspends it's old skin on the partition of it's cell; which, while it strengthens the fence, at the same time diminishes the extent of it's late apartment. The same cell, in the space of one summer, is often tenanted by three or four worms in succession; and, the next season, by three

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three or four more. Each worm takes particular care to fortify the pannels of it's cell, by hanging up it's spoils there; and thus the partitions being lined six or eight deep, become at last too narrow for a new brood, and are applied to the purpose before-mentioned. Those cells where honey only is deposited, are much deeper than the rest; and, when the increase of this delicious store happens to be so great, that there is not sufficient room for it, the Bees either lengthen their combs, or build others considerably longer than the former. Sometimes they work in three combs at a time; for, in that case, more Bees may be thus employed, without confusing each other.

Honey, however, as before observed, is not the only food on which these animals subsist. The farina of flowers, from which their wax is formed, is one of their most favourite repasts: on this they in a great measure subsist during the summer; and also lay up a large winter stock of it. When the flowers on which Bees generally feed are not fully blown, and this dust, or farina, does not appear in sufficient quantities, they pinch the tops of the stamina in which it is contained with their teeth; and thus anticipate the progress of vegetation. In April and May, the Bees are constantly employed from morning till evening in collecting this food; but, in the middle of summer, when the weather proves very warm, they generally relinquish that labour before noon.

The Bee is furnished with a stomach for it's wax, as well as with one for it's honey: in the former, the powder is altered, digested, and concocted into real wax; and is again ejected by the same passage by which it was swallowed. Every comb, when newly formed, is white; but, as it grows old, it gradually becomes yellow, and afterwards almost black. Besides the wax thus digested, there is a large portion of the powder kneaded up for food in every hive, and kept in separate cells, for winter provision: this, among country people, obtains the name of Bee-bread; and is said to contribute to the health and strength of the animals during the inclemency of winter. Those who rear Bees may rob them of their honey, and feed them with treacle during that season; but no proper substitute has yet been discovered for the Bee-bread, without which the insects soon become consumptive, and die.

The Bee extracts the honey from that part of the flower called the nectarium. From it's mouth this delicious fluid passes into it's gullet, and from thence into it's first stomach or honey-bag; which, when distended, appears like an oblong bladder. When it has sufficiently filled it's first stomach, it returns to the hive, where it disgorges the honey into one of the cells; though it sometimes delivers it to one or other of it's society, at the mouth of the hive, and instantly flies off for a fresh supply. Some of the honeycombs are always left open for common use; while others are stopped up till there is a necessity for opening them. Each of these combs is carefully covered with wax; and so well closed, that the smallest breath of air cannot possibly gain admission.

If we consider this little animal attentively, it will appear that, after the necessary precautions for the immediate preservation of the community, it's second care is turned to the continuance of posterity. How numerous soever the multitude of Bees in a swarm may appear, if we credit the inquisitive and accurate Reaumur, they all derive their origin from one single parent, called the queen

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Bee. It is, indeed, surprizing that a single insect should, in the course of one summer, give birth to more than twenty thousand young; but, were we to open it's body, our wonder would quickly cease, as the number of eggs contained in it at one time sometimes amount to five thousand. The queen, whose existence is of such importance to her subjects, may easily be distinguished from the rest by her size, as well as the figure of her body. On her preservation depends the welfare of the whole commonwealth; and the homage paid her by all the rest of the swarm indicates their great concern for her personal security. If this insect be studiously observed, she will be seen, at times, attended by a numerous retinue, marching from cell to cell, and depositing a small egg in each. The Bees which generally compose her train, are supposed to be those males which serve to impregnate her by turns: they are larger and blacker than the common Bees, but are unfurnished with stings, have no inclination for labour, and seem formed merely to propagate the species, and to attend the queen whenever she thinks proper to issue from the secret retreats of the hive, where she usually resides: on the union of these two kinds, therefore, all expectations of a future progeny depend.

Though the working Bees are of no sex, and only labour for another's offspring, such is their attachment to the queen, that, if she happens to die, they instantly intermit their labours, and take no farther care of posterity. If, however, in this state of general despair, another queen presents herself, they immediately recognize her as their sovereign, and diligently return to their former habits of industry. However, this extraordinary fertility of the queen Bee, and the great deference paid her by the rest, have been controverted by some recent observers; who assert, that the common Bees are parents themselves; that they deposit their eggs in cells previously prepared; and that the females are impregnated by the males, and bring forth a progeny wholly their own.

When the queen Bee has deposited a sufficient number of eggs in the cells, the working Bees immediately undertake the care of the rising posterity; and are observed to leave off their usual employments, in order either to construct proper receptacles for eggs, or to compleat those which are already begun. They purposely build little cells, extremely solid, for the reception of the young brood, in the construction of which they use a great deal of wax. There is usually but one egg deposited in each cell; but, when the fecundity of the queen exceeds the number of cells already prepared, there are sometimes three or four eggs crowded together in the same apartment. This, however, is an inconvenience of which the working Bees will by no means admit: for, being sensible that two young Bees cannot thrive properly in a space assigned for one only, they take care to leave a separate cell for every egg, and either remove or destroy the superfluous ones. This egg is fixed to the bottom of the cell, and touches it in a single point; and, a day or two after it has been deposited, the worm protrudes itself from the shell, and exhibits the appearance of a maggot rolled up in a ring, and lying softly on a bed of a whitish-coloured jelly, on which the little animal begins to feed. The working Bees now attend it with the most anxious and parental tenderness; furnishing it very frequently with a supply of this whitish substance, and watching the cell with unremitting care.

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care. Thus attended, and plentifully fed, the worm, in less than six days, arrives at it's proper growth, when it no longer accepts the offered food. When the other Bees perceive that it has no farther occasion to be thus fed, they perform the last office of their tender regard, by shutting up the little animal in it's cell, and walling up the mouth of it's apartment with wax; and, having thus secured it from every external injury, they leave it. No sooner, however, is the worm thus enclosed, than, from a state of inactivity, it begins to labour, extending and shortening it's body; and, by this means, lining the walls of it's apartment with a kind of silken tapestry, which it spins after the manner of caterpillars before they undergo their last transformation. When the cell is thus prepared, the animal is soon transformed into an aurelia; but different from that of the common caterpillar, as it exhibits not only the legs, but also the wings, of the future Bee, in it's present state of confinement. Thus, in about twenty days after the egg is laid, the Bee is compleatly formed, and fitted to undergo the fatigues of it's state; and all it's parts having acquired their proper strength and consistence, the young animal bursts from it's prison, by piercing with it's teeth the waxen door which confines it. When just freed from it's cell, it is moist, and seems to be incommoded with the spoils of it's former situation; but a band of officious Bees is soon seen to flock round it, and to lick it clean on all sides with their trunks; another, with equal assiduity, is observed to feed it with honey; and a third begins to cleanse the cell that has just been left, to carry the ordure out of the hive, and to fix a place for the new inhabitant. The young Bee, however, soon repays their care by it's industry; for, as soon as it's external parts become dry, it discovers it's natural propensity to labour, and industriously begins it's task, which it unremittingly pursues through life.

The little insect, thus properly equipped for duty by it's fellow-labourers, and at the same time instructed by nature, goes in quest of flowers; chusing those which are calculated to yield it a supply, and rejecting such as are either destitute of honey, or have been drained already by other adventurers: and, when loaded, is never at a loss to find it's way back to the common habitation. After the first sally, it begins to gather the mealy powder that is contained in every flower, and is afterwards converted into wax; and, the very first day on which it commences it's labours, it returns to the hive with two large balls of this substance sticking to it's thighs.

When the Bees begin to break their prisons, there are generally about a hundred liberated in one day; and thus, in the space of a few weeks, the number of the inhabitants of one hive becomes so great, that there is no room for the new-comers, who are scarcely all excluded from their cells, when they are obliged by the old Bees to issue forth in quest of new habitations: however, while there is room enough in the hive, the Bees remain quietly together; and necessity alone occasions a separation. Sometimes, indeed, the young brood refuse to depart, and even venture to resist their progenitors. The young Bees are distinguished by being browner than the old ones, and by being covered with white hair; and the old ones are of a light colour, with red hair. The two armies are therefore easily distinguishable; and though dreadful battles often ensue between them, the veterans generally prove victorious.

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The swarms make their appearance at different seasons of the year, and according to the variation of the climate; of which migrations there are several general prognostics. The night preceding, an unusual buzzing is heard in the hive; and the next morning, though the weather be soft and inviting, they seem not to obey the call, being intent on more important business within: all labour is discontinued in the hive; and every Bee is employed in forcing, or reluctantly yielding, a submission. At length, after some noise and tumult, a queen Bee is chosen, to guard, rather than conduct, the young colony to other habitations; and then they are marshalled without any apparent conductor. In less than a minute, they leave their native abode; and, forming an orb round their protectress, they set off, without seeming to know the place of their destination, or having any pre-concerted rout. The usual time of swarming is from ten in the morning till three in the afternoon, when the sun shines bright, and invites them to seek their fortunes. They flutter for a while in the air, and sometimes undertake a distant journey; but more frequently are contented with some neighbouring asylum, the branch of a tree, the top of a chimney, or some other exposed situation.

It is remarkable, that all animals which have been long under the protection of man, seem to lose a part of their natural sagacity in providing for themselves. In those countries where the Bees are wild, and unprotected by man, they are always sure to build their waxen cells in the hollows of trees; but with us they appear improvident in their choice; and the first green branch which stops their flight, is deemed sufficient for their abode. It does not even appear that the queen chuses the place where they are to alight; for numbers of the swarm, when they conceive a predilection for any particular branch, spontaneously settle on it; others follow their example; and at last the queen herself, finding the majority of the swarm convened together, condescends to place herself among them. The queen being settled, the rest of the swarm soon flock around her; and, in about a quarter of an hour, the whole body seems to be perfectly at rest.

It sometimes happens that two or three queens preside over a swarm; in which case the colony is divided into parties: but as one particular queen has generally more influence than the others, the Bees gradually desert the weakest, and shelter themselves under their most powerful protector. The deserted queens do not long survive this treatment; but, taking refuge under the new sovereign, they are soon dispatched through the jealousy of their rival. Till this cruel execution is performed, the Bees never begin their labours; and, should a queen Bee belonging to the new colony be left in the old hive, she is sure to undergo the same fate. However, the Bees never sacrifice any of their queens while the hive is full of wax and honey; for, under such circumstances, they are aware that there can be no danger in maintaining a plurality of breeders.

The swarm being conducted to a place of safety, and the policy of government settled, the Bees soon resume their accustomed labours; and the formation of cells for the reception of honey and of the rising progeny, as well as the impregnation of the queen, now employ their unceasing industry. But, towards the latter end of summer, when the colony is sufficiently stocked with inhabitants, a cruel, though

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though necessary, piece of policy, takes place. The drone Bees (generally about a hundred in each hive) are marked for destruction; and those devoted animals, who had hitherto led a life of indolence and pleasure, and whose only employment consisted in impregnating the queen, and rioting on the labours of the hive, without improving the common stock, now share the fate of mere voluptuaries, and fall a sacrifice to the common resentment of the society. The working Bees declare war against them in a body; and, in the space of two or three days, the ground all round the hive is strewed with the dead. Nor are the labouring Bees contented with this sacrifice; they even dispatch such drones as are yet remaining in the cells in their worm-state, and eject their bodies from the hive.

When a hive sends out several swarms in a year, the first is always the best, as well as the most numerous; for, having the greatest part of the summer before them, they have the more time for making wax and honey, and consequently their labours are the most valuable to their proprietor. Though the swarm is principally made up of the younger Bees, those of all ages generally compose the number of emigrants: and as a single hive sometimes contains upwards of forty thousand inhabitants, such a vast body may well be supposed to work with great expedition. Such, in fact, are their exertions, that in less than twenty-four hours they often form a series of combs twenty inches in length, and seven or eight in breadth; and they not unfrequently fill their hives with wax in less than five days. Generally, however, the first fifteen days are employed in making wax.

Columella directs, that the apiary, or Bee-garden, be situated so as to face the south; that it be in a valley, that the loaded Bees may with greater ease descend to their homes; that it be near the habitations of men, on account of the convenience of watching them, yet so placed as not to be exposed either to noisome smells or the disturbance of men or cattle; that it be surrounded with a low wall; and that, if possible, a running stream be near it. A farm, however, or even a country, may be overstocked with these industrious animals; for a certain number of hives always require a proportionable quantity of flowers for the subsistence of the Bees they contain.

When the flowers in the vicinity of the hives of these insects are all rifled, they are of course obliged to take more extensive ranges: but their indefatigable abilities may be over-tasked; for they frequently either become weary in the pursuit, are devoured by birds, or beat down by the wind and rain. From this consideration, in some parts of France and Piedmont, the natives have constructed a kind of barge, capable of containing from three-score to a hundred Bee-hives, and well defended from the inclemency of an accidental storm; and with these the owners suffer themselves to float gently down the stream. As the Bees are continually chusing their flowery food along the banks, they are furnished with sweets before rifled; and thus a single floating Bee-house, during a favourable season, amply repays the care of the proprietors, by yielding a considerable return of honey. Were this method adopted in England, as our rivers are less rapid, and their banks more flowery than those of most other countries, such an employment might probably yield the assiduous swain an easy and comfortable maintenance; while the advantages resulting from it would be proportionably great.

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Bees collect two sorts of wax; the one coarse, and the other fine. The coarser sort is the best, and is generally distinguished by the name of propolis; with which, as before observed, these industrious insects stop up all the holes and crevices of their hives. Being much more resinous than the finer wax, it is consequently better adapted to resist the moisture of the season, as well as to preserve their works warm and dry within. The fine wax is as necessary to the preservation of the Bees as the honey itself; for with it they construct their lodgings, and cover the cells of their young; and in it they deposit their stores of honey.

There are also two kinds of honey; the white and the yellow: the white is taken from the honeycombs without the assistance of fire; while the yellow is extracted by heat, and squeezed through bags, in a press. The best honey is new, thick, and granulated; of a clear transparent colour; of an aromatic smell; and of a sweet lively taste. The honey of mountainous countries is preferable to that of champain ones; and the honey made during the vernal season is more highly esteemed than that gathered in summer; while the last is still more valuable than that of autumn, when the flowers begin to fade, and consequently to lose their balmy fragrance. Nothing, however, can be more inhuman than the modes usually adopted in order to the possession of this valuable treasure. Were we to kill the hen for it's egg, the cow for it's milk, or the sheep for it's fleece, all would instantly perceive how much we acted contrary to our own interests; and yet a conduct in some measure similar is practised yearly with respect to the industrious Bees. Would it not be more wise, as well as more humane, to content ourselves with taking away a portion of their wax and honey, as is the practice in several other countries? With us, when a hive has been doomed to destruction, a hole is dug near it, and a stick, at the end of which a rag smeared with melted brimstone is affixed, is drove into it: after which the rag is set on fire; and the hive being placed over the flame, the earth is instantly thrown up all around, that none of the smoke may escape. In a few minutes all the Bees appear as if dead; and, in a little more time, they would be irrecoverably so: but it has been proved by experiment, that those Bees which have only been affected by the fumes of the brimstone recover again; and hence it seems certain, that the fumes of brimstone, with some necessary precautions, might be used for the purpose of intoxicating Bees. In this inhuman manner the heaviest as well as the lightest hives are treated: the former, because they yield the greatest profit, with an immediate return; and the latter, because the insects would not be able to survive the winter.

The practice of the ancients, however, with respect to the treatment of Bees, was very different: they were content to share with these industrious insects the produce of their labours; and some very laudable attempts have been made in this country to attain the desirable end of securing the wax and the honey without destroying the Bees. In 1665, John Geddy, Esq. published his invention of boxes for preserving the lives of Bees: these were improved by Dr. Warder; who embellished his account of the structure and use of these boxes with many curious circumstances respecting the economy of Bees. In the same laudable track followed two very ingenious divines; viz. Mr. John Thorley, of Oxford; and Mr. Stephen White, of Holton, in Suffolk; who carried the method of preserving the

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lives of Bees to a still higher degree of perfection. Mr. Wildman, likewise, so universally known and admired for his curious experiments on this tribe of insects, has obliged the world with the following method, by which the wax and honey may be obtained without destroying the Bees.

'Remove,' says he, 'the hive from which you wish to take the wax and the honey, into a room considerably darkened, that it may at first appear to the Bees like the dusk of the evening. Gently invert the hive, placing it between the frames of a chair, or any other steady support; and cover it with an empty hive, a little raised, to give the Bees sufficient light to get into it. While you hold the empty hive, steadily supported on the edge of the full hive, between your side and your left-arm, keep striking with your other hand all round the full hive from top to bottom, in the manner of beating a drum; so that the Bees may be frightened by the continual noise from all quarters; and, in consequence thereof, they will mount out of the full hive into the empty one. Repeat the strokes rather quick than strong round the hive, till all the Bees have changed their abode, which will generally happen in about five minutes. It is to be observed, that the fuller the hive is, the sooner the Bees will have left it. As soon as a number of them have got into the empty hive, it should be raised a little from the full one, that the communication between them may not be stopped. When all the Bees have left the full hive, the other, in which they have taken shelter, should be placed on the stand from which the former hive was taken, in order to receive the absent Bees, as they return from the fields.

'If this be done early in the season, the operator should examine the royal cells; for if any of them contain young Bees, they must, as well as all the combs containing them, be saved in the hive. Take out the other combs with a long, broad, and pliant knife; cutting them from the sides and crown as clean as possible, to save the future labours of the Bees, who must lick up the honey spilt, and remove every grain of wax: the sides of the hive should then be scraped with a table-spoon, in order to clear away what has been left by the knife. Thus, having separated the wax and honey, let a table, covered with a clean cloth, be placed near the stand; and, giving the hive in which the Bees are contained a sudden shake, striking it at the same time pretty forcibly, the Bees will be shaken on the cloth. Put their own hive under them immediately, raised a little on one side, that the Bees may more easily enter; and, when all have recovered their original situation, place it on the stand, as before. If the hive in which the Bees are contained be turned uppermost, and their own hive placed over it, the Bees will immediately ascend into it, especially if the lower sides be struck, in order to alarm them: for the effects of fear impressed on the Bees by the continual noise, render them for a considerable time so mild and tractable, that they will bear any handling which does not sensibly hurt them, without any indications of resentment.'

Though Bees are nearly alike in all parts of the world, there are some variations which a naturalist ought to observe. In Guadaloupe, they are less by one half than those common to Europe, being blacker, as well as rounder: they have no stings; and they build their cells in hollow trees, where, if the holes they meet with are too large, they construct a sort of waxen-houses, shaped like a pear, in which they lodge their store, and deposit their

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eggs. They place their honey in waxen vessels of a deep black or violet colour, and about the size of pigeons eggs; and these are so united, that there is no space left unoccupied. The honey never congeals, but remains always in a fluid state, of the consistence of oil, and the colour of amber.

In all the tropical climates there are found little black Bees without stings; and though these countries seem replete with Bees like our own, the former are the most useful and laborious tribes in that part of the world: the honey they produce is neither so unpalatable, nor so surfeiting, as ours; and the wax is so soft, that it is only used for medicinal purposes, never acquiring a consistence sufficient to be made into candles.

In every country of Europe, indeed, there are several tribes of insects distinguished by the names of Bees; which, however, differ very considerably from the social and industrious race already described.

BEE, HUMBLE. The largest of all this tribe is near three quarters of an inch long, and a third of an inch broad; the body, except the back-part about the vent, which is white, is black and hairy; and the fore-part inclines to a yellow. These insects are seen in every field, and perched on every flower. They build their nests in holes of the ground with dry leaves intermixed with wax and wool, and defend themselves from the inclemency of the weather with moss. Each Humble Bee builds a separate cell, about the size of a small nutmeg, which is round and hollow, and contains the honey in a bag. Several of these cells are joined together in such a manner as to give the whole the appearance of a cluster of grapes. The females, which have the appearance of wasps, are but few, and deposit their eggs in cells, which the rest soon cover over with wax. It is uncertain whether this tribe has a queen; but there is one Bee much larger than the rest, destitute of wings and hair, and all over black like polished ebony: this female views all the works from time to time; and frequently enters into the cells, as if desirous of knowing whether the business of the rest of the Bees is properly transacted. In the morning, the young Humble Bees are very idle, and seem averse to labour, till one of the largest thrusts half its body from a hole designed for that purpose; and, being seated on the top of the nest, beats its wings for twenty minutes successively, buzzing, without intermission, till the whole colony is put in motion.

The Humble Bees collect honey, as well as the common ones; but it is neither so fine nor so good; nor is their wax so clean, or so capable of fusion.

The green and yellow Bee is the most beautiful of this species. It is shaped like the common Bee, but is considerably smaller. The head and breast are of a fine bright blue colour, with an admixture of green; the body is of a beautiful glossy yellow, and looks as if gilt; the breast, and the last segment of the body but one, are dentated behind; and the feelers, which are black, are composed of twelve joints.

BEE, WOOD. This species of Bee is somewhat larger than the female of the common sort. Their bodies are of a very deep blue colour, smooth, and shining; their fore-wings are of a deep violet colour; on their sides, the hinder-part of their bodies, and their breasts, there are long black hairs; and their trunks resemble those of the common Bees.

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Though the Wood Bees are by no means numerous, there is scarcely a garden where some of them may not be found at different seasons of the year. They make their first appearance at the close of winter, when they are frequently seen flying near such walls as are exposed to the sun. They generally form their nests in pieces of half rotten wood: and the holes are not made directly forward, but inclining to one side, and having apertures large enough to admit the middle-finger; from which run their inner apartments, each generally twelve or fifteen inches long. These cavities they bore with their teeth, and generally diverge them into three or four different rooms; in each of which they deposit ten or twelve eggs, which are involved in a sort of paste, serving for the protection of the young animals, as well as for their nourishment. When they turn to worms, they are very white; the nymphs which proceed from them are of the same colour, but afterwards turn brown, and then blackish, by degrees. The females perform all the labour; and the males have no stings. These Bees, when grown up, feed upon a sort of lice of a reddish brown colour, each about the size of the head of a small pin.

BEE, MASON. The Mason Bees construct their cells of a kind of mortar made of earth, against those walls which are exposed to the sun. This mortar, which is at first soft, soon becomes as hard as stone; and the eggs being laid in this cement, undergo the same metamorphosis as those of the common Bees, each nest or lodging consisting of several cells. Some of these Bees are red, and others black; but they are all nearly of the same size, being about the length of drones, though of inferior thickness.

The black Mason Bees are armed with stings; but the red, being those males which are exempted from labour, have none. The liquid of which this mortar is composed proceeds from their mouths, and serves to glue one particle of earth to another. Externally their nests are rough, but internally they are extremely smooth. Each cell is about an inch in height, and near half an inch in diameter; and to these cells the females carry the food necessary for their young, which is a sort of paste like that of the wood Bees.

In general, a nest consists of seven or eight cells; but sometimes of only three or four, one cell being placed over another. If the nest wants but few repairs, the insects make use of it the following year, and sometimes three or four years successively. They begin to build about the middle of April, and sometimes find great difficulty in completing their work by the end of June; and though, from the apparent strength of their houses, it might naturally be supposed that these Bees lodged in perfect security, no insects whatever are more exposed; for a kind of worm, with very strong teeth, frequently insinuates itself into their little fortifications, and devours the young.

There are many Bees of this species which, by making choice of sheltered places, form their houses with less durable materials than the former. They select stones with holes in them large enough to admit their whole bodies; and when the apertures happen to be too wide, they stop up part of them with mortar, and make them exactly round. These Bees are covered all over with a fine down, of two colours; that on their bodies being a kind of orange, while that on their breast-plates is quite black. Their trunks are small, and formed like those of the

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common Bees; but their teeth resemble the blades of scissars, except that they are ferrated. They have two horns, or feelers, on the fore-part of their heads, which are inflexible. Their paste is more liquid than that of the real Mason Bees; and they always stop up the holes of their cells with the same sort of earth which composes their nests.

BEE, GROUND. The Ground Bees build their nests in the earth; making round holes five or six inches deep, the mouths of which are so narrow, as barely to admit their little inhabitants. It is, indeed, curious to observe the patience and assiduity with which these insects labour: they carry out all the earth, grain by grain, to the mouths of their holes, where it forms a little hillock; an Alps, indeed, if compared with the magnitude of the artists by whom it is raised. Sometimes the walls of gardens are undermined by their labours; some of their holes running directly downward, and others horizontally beneath the surface. Like the former sorts of Bees, they deposit in those cavities provisions for their young; though of a very different nature, as they have the appearance of corn, and possess a saccharine taste.

Some of the Ground Bees are not so large as small house-flies; while others are equal in magnitude to the common Bees. Some of them are of an oblong shape, and others short. Those which form their nests in the narrow walks of gardens are small, but have the appearance of common Bees; while others are black, with wings of a deep violet colour, and a little whitish down or hair on the insides of their thighs.

BEE-FLY. This insect forms a species of itself, being of a middle nature between the common Bee and the fly. The trunk differs from that of the common Bee, the greatest part of it being hid in a kind of shelly sheath; and, when protruded, it is accompanied with a sort of threads, four in number, but at other times it lies concealed beneath the teeth: under these threads there is a sort of fleshy prominence, the real tongue of the fly, with which it licks it's trunk. The body is longer than that of any other Bee; and the rings, which compose the trunk nearest the breast-plate, are reddish on the superior parts.

These Flies have their nests in the ground, nine or ten inches deep: and the females are armed with stings; but the males, which are distinguished by their superior magnitude, have none.

BEE, LEAF-CUTTING. The Leaf-Cutting Bees build their nests, as well as lay their eggs, among bits of leaves, very artificially placed in holes in the earth, of a finger's length. To these bits of leaves they give a cylindrical form; and with them they line the insides of their habitations, and afterwards cover them with paste of a reddish colour, which has something of a sweetish taste a little inclining to acid.

Of these Bees there are several species, all distinguished by one common character, that of being short. Those which build their nests with the leaves of the chestnut-tree are as big as drones; while those which make use of rose-tree leaves are smaller than the common Bees; and, through their downy coverings, their bodies appear semipellucid. The colour of the upper-part of their bodies is a brownish black; except that on each side there is a tuft of hair almost white. The colour of the extremities of their bodies is a blackish brown, as well above as below; but the three rings next to them are covered, on the belly part, with long

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long hairs of a cinnamon colour: and those of the croslet are brown. The species which shews a predilection for the leaves of the chesnut, is red above, and of a whitish-grey underneath.

There are two or three more species of the Leaf-Cutting Bees; the trunks of all which are constructed like those of the common Bees, except that they are covered above, as well as on the sides, with a strong shelly case, which serves to prevent the attrition of their trunks by the edges of the leaves while they are dividing them.

The males are somewhat less than the females, and more pointed behind; and, when pressed by the fingers, six small horns proceed from them, three on each side. Each of their teeth is terminated by a hook, sharp at the end, and serrated on the sides.

When the female of this species has finished her nest, she fills it up with paste, lays her egg, and then closes it up. When the egg is grown to a proper size, the insect weaves a silken shell, which adheres to the sides of the leaves: the exterior part of the silk is coarse, and as brown as coffee; but the inside is very fine and white, being smooth and shining like satin.

BEE, WALL. The Wall Bees make their nests of a kind of silky membranes, with which they fill up the vacuities between the stones in walls. They consist of several cells, placed end to end, in the shape of thimbles. Though the webs of these membranes are very close, they are transparent, and of a whitish colour. It is supposed that the Bees spin these webs with a glutinous substance extracted from their bodies, almost in the same manner as silk-worms. They are rather less than common Bees; but, like them, have a croslet of red hair; and the rings of their bodies are of a brown colour bordered with white hair. They resemble the leaf-cutting Bees in shape; and their trunks are short and thick, but largest at their extremities, and a little cloven: transverse rays or streaks are formed by short hair on the upper parts, and a kind of longish hair borders the turn of the hollow ones. With respect to size, the males and females are exactly the same; but the former are destitute of stings. The feet of these Bees seem adapted for digging the earth; for they have two points, one at the end, and another somewhat shorter; forming together a kind of fork with unequal prongs.

BEE, TAPESTRY. The Tapestry Bees obtain their name from the circumstance of their lining their nests with a species of tapestry, collected from the flowers of the wild poppy when newly blown, bits of which they place at small intervals from each other. They generally build their nests by the sides of highways and paths in corn-fields. They are shorter in proportion than the common Bees, but nearly of the same colour. Like several other species already mentioned, they fill their nests with paste for the nutrition of their young.

BEE-EATER. This bird is of the shape of a king's-fisher, and about the size of a blackbird. The bill is like that of the halcyon tribe, except that it is a little more incurvated; and the feet are exactly like those of the king's-fisher. The tongue, which is slender, rough, and jagged towards the end, appears as if it were lacerated. The eyes, in some of these birds, are of a hazel colour, and in others of a beautiful red. The head is large and oblong; and the feathers at the base of the upper-chap are white, shaded with green and yellow. The back part of the head, in some, is of a deep

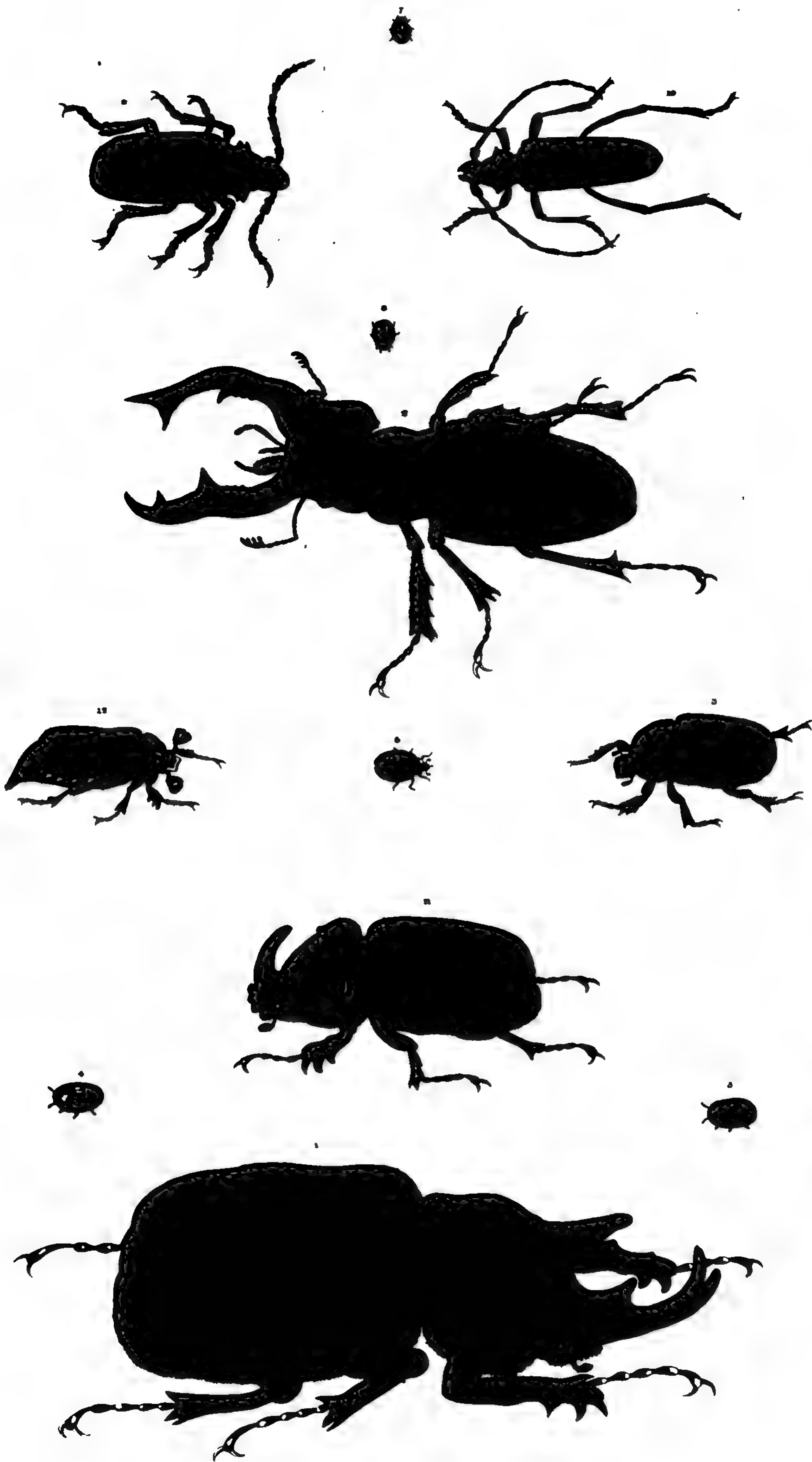
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red; and in others there is a mixture of green among it. From the corners of the bill, along each side of the head, runs a black streak, which extends beyond the eyes; and near it, on the upper-part of the head, the feathers are of a pale yellow. The belly, neck, and breast, are of a blueish green; and the feathers on the shoulders, in some, are blue; on the under-wing, in others, green, with an admixture of red. The large wing-feathers are of a colour inclining to orange, with black tips, intermixed with some which are green. The tail is upwards of three inches in length; and consists of about twelve feathers, the two middlemost being longer than the rest, and terminating in sharp points. The colour of the tail varies; being green in some, in others blue, and of a darkish brown underneath. This bird is a native of Bengal in the East Indies, and several other countries.

In the East, and particularly in Bengal, there is another species about the same size; with a black bill, thick at the base, bending downwards, and near two inches long. The eyes are of a fine red; and on each side of the head is a black streak, which, beginning at the corner of the mouth, extends beyond the eyes; the base of the upper-chap, as well as that part which is under the chin, is covered with bright pale blue feathers; the upper part of the head, and the back and wings, are of a dusky yellow; the tips of the quill-feathers are brown; the breast and belly are green; and the under-part, near the vent, is of a pale yellow, with a small mixture of green. The outermost feathers of the tail are variegated with green and yellow; the two middlemost feathers being twice as long as the rest, and terminating in sharp points of a brown colour. The legs and feet are like those of the king's-fisher.

BEE-EATER, INDIAN. This bird is only half the size of the European Bee-Eater, or the merops; and the middle feathers of its tail are considerably longer. The bill is pretty long and sharp-pointed, with a downward incurvation; the upper mandible is black or dusky, and the lower whitish at the base; the beginning of the forehead next the bill is blue, of which colour likewise are the throat and sides of the head beneath the eyes; and the crown and hinder parts of the head and neck are of a red or orange colour. On the upper part of the breast there is a transverse mark in the form of a crescent, with the horns pointing upwards; the back, and lesser covert feathers of the wings, are of a parrot-green colour; the rump, or coverts of the tail, are of a blueish green; the breast and belly are of a light green; the thighs are of a reddish brown; and the coverts beneath the tail are of a dirty green. The greater quills of the wings are dusky at their tips, having a little green on their edges towards the base; the centre quills are of an orange colour, bordered with green marked with black spots a little within their tips, the extreme tips being orange; the interior quills next the back are wholly green; the first row of coverts above the quills is orange in the centre, and green on the edges. The tail is green; the shafts of the feathers are brown; the two centre feathers project more than two inches beyond the rest, are brown at the tips, and very narrow, being little more than the naked shafts; the under-side of the tail is of a dusky green; the legs are short; the three forward toes are partly connected together; the claws are pretty strong; and the legs and feet are of a dusky brown colour.

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1 ELEPHANT BEETLE. 2 STAG BEETLE. 3 BRASS BEETLE. 4 GREEN TORTOISE BEETLE. 5 SHIELD BEETLE. 6 SEVEN-
 SPOTTED LADY-COW BEETLE. 7 TWO SPOTTED LADY-COW BEETLE. 8 FOUR SPOTTED LADY-COW BEETLE.
 9 CAPRICORN BEETLE. 10 MUSK BEETLE. 11 UNICORN BEETLE. 12 DORR BEETLE OR CHAPER.

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BEET-FLY. The name of a very small fly which usually frequents the leaves of the beet.

BEETLE. The English name for the scarabæus, a genus of insects having two transparent wings, with cases which cover them close while at rest, but which allow them their proper play when flying. These insects, like the rest of the order, are all produced from eggs: they then become grubs; afterwards they are changed into chrysalides, in which state the parts of the future animals are distinctly seen; and, lastly, the Beetles, leaving their prisons, sally forth as winged animals in full maturity.

The species of Beetles, properly so called, are extremely numerous: all of them, however, concur in one common formation of having cases to their wings; which are the more necessary for these insects, because they often live under the surface of the earth in holes excavated by their own industry. These cases guard the real wings from the various injuries which they might otherwise sustain by rubbing against the sides of the abode of the Beetles; and, though they do not assist the insects in their flight, they keep their internal wings clean and smooth; and from them that buzzing noise proceeds which is always heard when the animals ascend into the air.

As in shell-fish, the bones of all animals of the Beetle kind are placed externally: and their muscles, which are all internal, are formed very much like those of quadrupeds; and, considering their size, are endued with surprizing strength. The power derived from these muscles is peculiarly serviceable to the insects in digging their subterraneous abodes, where they are most usually hatched, and to which they generally return, even after they have become winged insects, and are capable of ranging the sky.

The varieties of this genus arise not only from a difference of shape and colour, but also from their magnitudes; some Beetles being no larger than the head of a pin; while others are of the size of a man's fist. Their most essential difference, however, proceeds from the stages of their existence; some being produced in a month, and in a single season undergoing all their transformations; while others require near four years to compleat their production, and live in a winged state for a whole year after.

BEETLE, ELEPHANT. This is the largest species of the Beetle kind hitherto known; and is found in South America, particularly in Guiana and Surinam, as well as about the River Oroonoko. It is of a black colour; and it's whole body is covered with a very hard shell, quite as thick and as strong as that of a small crab; it's length, from the hinder part of the eyes, is almost four inches, and from that to the extremity of the proboscis, or trunk, four inches and three quarters; the transverse diameter of the body is two inches and a quarter; and the breadth of each elytron, or case for the wings, is an inch and three-tenths; the antennæ, or feelers, are quite horny; for which reason the proboscis, or trunk, is moveable at it's insertion into the head, and seems to supply the place of feelers; the horns are eight-tenths of an inch long, and terminate in points; the proboscis is an inch and a quarter long, and turns upwards, making a crooked line terminating in two horns, each of which is near a quarter of an inch long, but they have no perforations, like the trunks of other insects. About four-tenths of an inch above the head, or that side next the body, there is a pro-

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minence, or small horn, which, if the rest of the trunk were taken away, would cause this part to resemble the horn of a rhinoceros; and the feet are all forked at the end.

BEETLE, RHINOCEROS. There are several varieties of this species; one of which, a native of the East Indies, is of a jet-black colour, and has a horn on it's nose, which turns upwards; and about the middle of it's belly there is another horn, which arises from a tubercle, and turns inwards. The whole length of the body of the animal, from the extremity of the horn to the back-part, is four inches, and the breadth is almost two: it has also two horns behind the snout; and six feet, or legs, forked at the ends.

There is another Rhinoceros Beetle common about Vienna, in Germany. The horn has a strong resemblance to that of the rhinoceros, as it turns up, and is sharp-pointed; it has a prominence behind the head; and, like the former, it has six feet. The whole body of this insect, except the belly, which is of a deep red colour, is as black and shining as pitch.

A third and fourth variety of the Rhinoceros Beetles have almost the same shapes; except that the wings of the former exceed the cases in length, while in the latter they are shorter. They appear as if covered over with a shining ink; and the horns on their heads are full of knots: their heads are of a greenish gold-colour; and their shoulders are red; but their bellies are purplish; and the cases of their wings are of the same colour as their heads. Their feet and legs are of a dun colour; and the wings under the cases are whitish.

BEETLE, STAG. This insect is about an inch long, and half an inch broad; and has two horns without joints, but ramified like those of a stag; from which peculiarity it receives it's name. It is furnished with nippers at the extremity of the snout, not much unlike the claws of lobsters, with which it can pinch small objects. The eyes are hard, prominent, and whitish; and near them, on both sides, there are two pair of feelers. One pair of these feelers are branched, and placed between the horns and the eyes, having each a joint, and forming nearly a right-angle: the other pair, which are straight and flat, are placed in the centre of the forehead, having a tubercle at their extremities like the head of a nail. The animal has six feet, of which the foremost pair are longer and thicker than the rest. This Beetle is of a dusky-brown colour, or rather blackish on the back, especially near the cases of the wings and breast; and the horns, which are sometimes as red as coral, give the animal a very singular and beautiful appearance. It is common in Kent and Sussex; and is sometimes seen in other counties of England.

BEETLE with lunated, prominent, and dentated jaws, and a smooth breast. This insect is about an inch long, and two-thirds of an inch broad; the thorax is smooth, convex, and black, without any prominencies, but a sort of an edge; the cases of the wings are smooth, and of a blackish-purple colour; and the jaws, which are in the form of a crescent, are prominent and black, and have two teeth in each. It feeds on the decayed parts of the trunks of ash trees, and burrows in the ground under their roots.

BEETLE, BRASS. This insect, which is one of the larger species, has a short, broad breast; it's shape is in general disproportionably broad, the eyes are small; the legs are long and slender; and

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the whole body is of a fine shining green, with a slight mixture of yellow. It frequents gardens, but is rather scarce.

BEETLE, with clavated feelers, and the cases of the wings on the fore-part. This species, which is small, has a black head and breast: the cases of the wings are grey towards the top; but, in other parts, are of a dusky blackish brown, with transverse streaks of white. It feeds on the carcases of dead animals, and particularly of birds. Some naturalists call this species *dermestes*.

BEETLE, GREEN TORTOISE, with clavated annulated feelers. This animal has a small oval body, convex on the back, and flat on the belly; the upper part consists of the cases of the wings and the shield; the feelers are of a pale colour, but somewhat deeper on their tops than elsewhere; the legs are of a pale brown; and a kind of a prominent ring runs round the cases of the wings, which entirely cover the body. It feeds on mint, and other herbs; and is common in most gardens. Linnaeus calls Beetles of this kind *cassida*, from their shields.

BEETLE, SHIELD, or BLACK CASSIDA, with bristly feelers, and a roundish body. This Beetle, which is of a dusky black colour, is frequently found in houses, where it is sometimes very mischievous, eating holes in woollen-cloths and stuffs. The cases of the wings are oblong, and lightly streaked with several very small concave spots; the shield is roundish, rough on the upper part, with a cruciated prominent edge; sometimes two spots appear on the side towards the hinder part, covered with yellow hairs; and the belly is blackish. Whenever this insect is touched, it draws up it's head and wings under it's body.

BEETLE, SHIELD; or, OVAL PALE CLOUDED CASSIDA, with an undivided shield covering the head. This insect is very small; it's body is of an oval shape, and of a pale brown colour, spotted and clouded all over with one of a more dusky hue, which gives it a distant resemblance to a tortoise-shell: it's shield, which is shaped like a crescent, is of a pale colour, without spots; the cases of it's wings are streaked and speckled, the streaks running in crooked lines; it's body is black; and it's feelers are black and slender. Beds of baum or mint are the common haunts of this insect.

BEETLE, LADY-COW, with reddish cases for the wings, and seven black spots on them. This beautiful and well-known insect has a black head, with two white spots on the forehead; and a black breast, which is whitish near the margin: the cases of it's wings are of an orange colour; and towards the base of each there are three black spots, and one which is common to both. The feelers of this insect are small and clavated; and it's under-part is wholly black.

BEETLE, LADY-COW, with red cases for the wings, and two black spots on them. This species has a black breast, excepting that there is one large spot on it's edge, and two very minute ones near the base, and also two others of the same size at the insertion of the feelers; the belly, feelers, and legs, being black. This Beetle is commonly found on alder-trees.

BEETLE, LADY-COW, with black cases for the wings, and four red spots on them. The breasts of this species are entirely black, and the spots on the cases of their wings are of a blood-red colour, those nearest the breast being the largest. These insects live on maple-trees in the north of England; but are sometimes seen, though seldom, in the hedges near London.

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BEETLE, FLYING, of the West Indies. This species, called *acudia* by the natives, has a luminous appearance, and is almost as big as a wren. It has four shining spots; two of which are placed near the eyes, and two under the wings.

BEETLE, AMERICAN BALL. This Beetle, to which the Americans give the appellation of *tumble-dung*, is an exceedingly curious insect. It is wholly of a dusky black colour, but rounder than the generality of those animals; and, though not much larger than the common black Beetle, is so very powerful, that if placed under a large brass candlestick, it will occasion it's moving backwards and forwards, as if agitated by an invisible hand, to the great admiration of those who are unaccustomed to the sight. But such amazing strength seems to be imparted to the insect for a more valuable purpose than that of exciting human curiosity; for there is hardly any animal more industrious, either in providing the means of subsistence, or a secure retreat for it's young. It is enabled to discover it's proper food, the excrements of men or beasts, by means of it's exquisite sense of smelling; on which it instantly drops, and begins to form round balls or pellets of the ordure, depositing an egg in the centre of each. About the month of September, it buries these pellets three feet deep in the earth, where they continue till the approach of spring; when the eggs are hatched, the nests burst, and the insects make their way from their subterraneous retreats. They indefatigably assist each other in rolling these globular pellets to the place where they are to be buried; and this they perform with a retrograde motion, raising up their hinder-parts, and shoving along the balls with their hind-feet. They are always accompanied by Beetles of a larger size than themselves, and of a more elegant structure and colour, whose breasts are covered with shields of a crimson colour, and shining like metal; their heads are of the same colour mixed with green, and furnished with glossy black horns, bent backwards: they are called the kings of the Beetles; but for what reason is uncertain, as they are employed in the same filthy labour as their companions.

BEETLE, CAPRICORN, or GOAT-CHAFER. This species is about the size of the stag Beetle, and of the same colour. The head is broadish; the eyes are large; the mouth, which is wide and forked, contains two exceedingly hard crooked teeth, with which it gnaws wood, making a noise like the grunting of a pig; the shoulders appear as if they were carved, and have hafts of the colour and polish of ebony; and the animal has six legs, three of which are furnished with joints so very weak, that they bend with the weight of the body. It has two horns growing above the eyes, consisting of ten flexible joints, not exactly round, but rough like those of a goat, and longer than it's whole body: these horns are moveable in any direction at the pleasure of the insect, except that, in the act of flying, they are thrust directly forward; and, when it is weary, they are used instead of feet. This Beetle, when at rest, generally suspends it's body from the branch of a tree by means of it's horns or feelers.

BEETLE, LARGE GREEN CAPRICORN, musk-scented. This is a most beautiful insect, it's whole body being of a glossy blue-green colour, with a cast of a shining gold-yellow. The wings under the cases are black; the legs are of a blueish green hue; the breast is pointed at each extremity; and between these points there are three small tubercles near the wings, and three still smaller towards the head. The cases of the wings are oblong, and somewhat

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somewhat like a lance, with three ribs a little elevated, and running lengthwise; the feelers are nearly of the same length with the body, and are composed of many small joints, decreasing in size towards the ends. This Beetle frequents willow-trees, and has a sort of musky smell.

BEETLE, RUSSIAN CAPRICORN, with very long horns. This Beetle is about three quarters of an inch long, and wholly grey. The cases of the wings, which are blunt, are covered with many small hairs, among which several small tubercles are interspersed; a dusky shade runs across the wings, which at the hinder part has an inclination to the centre; the breast is pointed at each end, and has four beautiful yellow spots towards it's hinder part; the eyes are black; and near the feelers, which are five times the length of the body, there is a black spot. These feelers are grey, and consist of ten joints, which shorten as they approach the head; and the wings are black, streaked with brown. This insect is found among old wood, but seldom in this climate.

BEETLE, BLACK CAPRICORN, with a hairy grey breast. The body of this insect, which is oblong, and somewhat depressed, is of a black colour, with a slight mixture of grey, and covered with many short hairs, having prominent tubercles between them; the breast is hairy and black, though the white hairs give it a greyish appearance; and on the hinder parts are two smooth prominent spots; the feelers are slender and black, and about half the length of the body; and there is an undulated line on the case of the wings, but so faint as to be scarcely perceptible. This Beetle lodges among timber, but is not very common in England.

BEETLE, UNICORN. There are several varieties of this species: which, however, may be placed under two divisions; the first having sharp protuberances in the breast, and the other none. Of the first division, besides those already described, are the black Unicorn Beetle; the reddish Unicorn Beetle; the black Unicorn Beetle, with irregular pale spots on the cases of the wings; the grey Unicorn Beetle spotted with black; the grey Unicorn Beetle with black cases to the wings, spotted with white; the grey and black Unicorn Beetle; the grey capricorn Beetle; and the shelly capricorn Beetle.

Of the second division, or such as are destitute of protuberances, are, the black capricorn Beetle; the shelly capricorn Beetle; the shelly capricorn Beetle, with a smooth breast; the brown capricorn Beetle; the grey capricorn Beetle; the black capricorn Beetle, with a longitudinal dentated line and yellow spots on the cases of the wings; and the shining violet-coloured capricorn Beetle.

BEETLE, VIOLET BLACK DUNG, called by Ray the greater Beetle. This animal has an oblong body, of a purplish black colour; a small head; large prominent eyes; and long and very slender feelers. It's general colour is black, except that the edges of the breast and wings are of a beautiful deep glossy purple; the cases of the wings have neither dots nor lines, but only a kind of wrinkles running lengthwise, and crossed by others which are scarcely perceptible. This Beetle frequents dung-hills and putrid vegetables.

BEETLE, PURPLISH BLACK DUNGHILL. This species is of the large kind; the general colour is blackish, with a strong and very fine tinge of glossy purple; the body is of an oblong shape, and pretty thick; the cases of the wings are marked with three lines, each of which is formed by a row of about

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twelve longitudinal concave yellow spots; and the lines between them are hollowed. It is generally found in dunghills, and amongst various putrid substances.

BEETLE, DUNGHILL, BLACK, with reddish legs. This species is scarcely larger than a common fly; the colour of the body is black; the breast is broad and short; the cases of the wings are streaked with eight lines; and the legs and bases of the feelers are of a reddish brown. Some naturalists give this insect the name of the burn-cow, or burst-cow, with a black body and red legs.

BEETLE, SMALL GILDED. This very beautiful insect, which frequents the banks of rivers, is of a fine glossy colour, resembling a yellow metal, with a little mixture of green. The eyes are black and prominent; the breast is narrow, and rounded; and the cases of the wings are adorned with many broad hollow specks, each of which has a prominent point in it's centre: these hollow specks, which are arranged in rows, are of a deep-black colour; but their bases are of a fine metalline yellow.

BEETLE, BURN-COW, or BURST-COW. This insect has filiform feelers; and it's head, which is half hid within it's breast, is of a roundish shape. Of this species there are several varieties; viz. the yellowish green Burn-Cow, the yellowish black Burn-Cow, the brownish brassy Burn-Cow, the brassy and clouded Burn-Cow with clavated feelers, and the Virginian Burn-Cow. These varieties differ from each other more in their magnitude and colour than in any particular conformations or habits: they are very troublesome to cattle; and chiefly frequent the banks of rivers, or other places where reeds abound.

BEETLE, DORR; or MAY-BUG, as it is called in some parts of England. This insect is one of the most curious, as well as most numerous, of all the Beetle tribe. Like the other species, it is furnished with cases to it's wings, of a reddish brown colour, sprinkled with a whitish dust, which is easily rubbed off. At some seasons, it's neck appears with a red plate; and, at others, with a black one: these, however, are distinct sorts, and the variation is by no means accidental. The fore-legs, which are very short, are calculated for burrowing in the ground, where this insect forms it's retreat. These Beetles are very formidable to husbandmen; for, at some seasons, they have been known to swarm in such numbers, as to consume every vegetable production. The two sexes in the Dorr are easily distinguished from each other by the superior length of the tufts at the extremities of the horns in the male. They begin to copulate in summer, when they are observed together for a considerable time. The female, after being impregnated, quickly begins burrowing in the ground, in order to deposit her burden. She makes a hole about half a foot deep, in which she places her eggs, which are of an oblong shape, with great regularity. When she has laid her whole quantity, she again ascends from her hole, and returns to her former way of life, finding subsistence on leaves and vegetables; and generally lies hid during the heat of the day among the branches of trees, hardly ever venturing abroad till the dusk of the evening.

The eggs having laid about three months in the ground, the inclosed insect begins to burst it's shell; and a small grub or maggot crawls forth, and feeds upon the roots of the nearest vegetables. All substances of this kind seem equally grateful to the animal; though it is probable that the mother-

the insect chuses what kinds of vegetables she thinks proper, among which to deposit her young.

In this state these voracious creatures continue for more than three years, devouring the roots of every plant they approach, and making their way under-ground, in quest of food, with great dispatch and facility. At length they grow to above the size of walnuts, being large, thick, and white maggots, with red heads, and most commonly discovered in new-turned earth, and which is eagerly sought after by birds of every species. When they have attained their full proportions in the maggot state, they are about an inch and a half long, their bodies being composed of twelve segments or joints, on each side of which are nine breathing-holes, and three red feet. Their heads are large in proportion to their bodies, and of a reddish colour, with pincers before, and semi-circular lips, with which they cut the roots of plants, and extract their moisture. As the insects, while in this state, live continually under ground, they have no occasion for eyes, and accordingly nature has not provided them with any; but they are furnished with two feelers, which serve to direct their motions.

About the end of the fourth year, the Beetle Dorr prepares to emerge from it's subterraneous abode; and, at the latter end of autumn, the grub, beginning to perceive the approach of it's transformation, buries itself deeper and deeper in the earth, sometimes six feet beneath the surface; and there forms itself a capacious apartment, the walls of which, from the excretions of it's body, are rendered very smooth and shining. It's abode being thus formed, it soon begins to shorten itself, to swell, and to burst it's last skin, in order to assume the form of a chrysalis, which at first appears of a yellowish colour; but, being heightened by degrees, at last becomes nearly red. It's external form now plainly discovers all the vestiges of the future winged insect, it's fore-parts being distinctly seen; while the animal, when viewed behind, appears as if wrapped up in swaddling-cloaths.

In this state the young Dorr continues for about three months longer; but the aurelia does not divest itself of all it's impediments, and become a perfect winged insect, till the beginning of January. Still, however, the animal is far from attaining it's natural strength, health, and appetite: it undergoes a kind of infantine imbecillity; and, unlike most other insects, which the instant they become flies have gained their full maturity, the Dorr continues for some time feeble and sickly; it's colour is much brighter than in the perfect animal; all it's parts are soft; and it's voracious nature seems for a while entirely suspended. As the animal is very often found in this state, it is erroneously supposed by those who are unacquainted with it's genuine history, that the old ones of the former season have interred themselves for the winter, in order to revisit the sun the ensuing summer: but the fact is, the old ones never survive the season after they have become denizens of the sky; but, like all the other winged tribes of insects, die through cold.

The Dorr, after having lived near four years in it's imperfect state, generally bursts from it's subterraneous abode during some mild evening about the latter end of May; when an attentive observer may see numbers of these insects issuing up before him in his pathway in a very curious and attracting manner, even perforating the hardest parts of the earth by their egression: and, when the season is very favourable, they are seen in myriads, buz-

zing along, and striking against every object which intercepts their flight. The mid-day sun, however, seems too powerful for their constitutions; for they then lurk under the leaves and branches of shady trees: the willow seems to be their most favourite food; and on it they settle in clusters, and seldom quit it till they have consumed all the verdure. In the evenings of those seasons which are most favourable to their propagation, they appear in incredible numbers; their continuance, however, is but short, as they have many formidable enemies to encounter, and the first severe weather totally annihilates them.

They begin to copulate soon after they are emancipated from their prisons. The Dorrs, in their winged state, seem much less noxious to vegetation than when in their imperfect one. In the latter, however, they sometimes destroy not only the verdure, but the very roots of plants; and, if the feathered tribe did not unanimously conspire to devour them, they would be fatal to agriculture, and probably occasion frequent famines.

BEETLE, WATER. These Beetles generally have feelers like bristles; and feet adapted for swimming, being a little bearded like an ear of corn; these feet are six in number, the hinder of which are longest and broadest. They seldom fly abroad in the day time; but, like the Beetle tribe in general, shew a predilection for the night.

BEETLE, GREAT WATER. This insect is an inch and a half long; it is entirely of a deep and somewhat glossy black; the eyes are pretty large; the feelers are short; the cases of the wings are smooth on the surface, under which the wings have a tincture of a silver colour; and the body gradually decreases in size, till it terminates in a point. It is very common in ponds and ditches, and riots on the more feeble aquatic insects.

BEETLE, BLACK WATER, with the cases of the wings yellow on the edges. This species is about the same size as the Great Water Beetle, but the head is small in proportion to the body. The eyes are large; the legs are strong and robust; the edges of the cases of the wings are very prominent, especially about the middle, where they are of a yellow colour; but every other part is black. It is common in rivers and brooks.

BEETLE, GOGGLE-EYED WATER. This species is somewhat less than that last described; the head, however, is very large, and the eyes are remarkably prominent; the cases of the wings are marked with ten streaks, which are discontinued before they run the whole length; and the colour is wholly of a blackish brown.

BEETLE, GREY WATER. This insect is about the size of the blue flesh-fly; it's breast is yellow in the middle, but black at the top and bottom; the cases of the wings are of a greyish colour, marked with a great number of yellowish shining specks, which at the edges become entirely yellow; there is also a yellow spot, in the shape of a heart, with black edges, on the top; and the point of the breast is obtuse, though slightly forked.

Linnaeus mentions a Water Beetle with perfoliated feelers; that with dilated sides; the common Water Beetle; and the Water-flea. These last are remarkable for skipping up and down on the surface of the water, as if they were at play; but, when the water is troubled, they sink to the bottom, or conceal themselves in the holes of the banks.

The other species are, the Water Beetle with a yellow

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yellow breast; that with brown wings and a black belly; the Water Beetle with a round body, marked with ten streaks on the cases of the wings; the oval-bodied Water Beetle, with the cases of the wings and the breast black; and the head and legs reddish; and the brown oval Water Beetle, with reddish legs, head and breast.

BEETLE, STINKING. This species obtains the name of tenebrio among naturalists, from the circumstance of it's hating the light. It is a pretty large insect, entirely of a coal-black colour; the legs and thighs are slender; and the feelers are composed of pretty long joints, except the last, which is roundish: the breast has a rim on it, and is marked with small spots. The animal walks very slowly; and, during the day-time, conceals itself in the deep holes of dunghills. It has a nauseous filthy smell, which even affects those places where it is found; and it seems to be of a very solitary nature, as two of them are seldom discovered together.

BEETLE, TENEBRIO BLACK; with the cases of the wings rounded behind. This is a pretty large animal; the back is slightly prominent; the head is small; the legs are long; it is entirely of a fine deep-black colour, with a purplish cast; and is frequently found in the hot-beds of gardens.

BEETLE, TENEBRIO BLACK; with prominent jaws. This insect is very little larger than the common fly; it's colour is a deep dull black; it's legs are long; and it's feelers are pretty long and slender. It is commonly found on the half-rotten branches of trees.

Linnæus informs us, that this insect is furnished with small filiform feelers; and that the superior part of the body, which appears like cases of wings, is closely connected, the animal being entirely destitute of wings.

BEETLE, OIL. This insect is called the proscarabæus by Linnæus and Mouset. It is distinguished by having a soft body, of a dusky blue colour, with a shining blackish cast: it has two wings, or rather the rudiments of wings, on the shoulders, which this insect uses much after the manner of the ostrich, to assist it in running, and not in flying. The circles which surround the backs and bellies of the young Oil Beetles are greenish; but those of the more adult are blue; and, on the slightest motion or touch, it emits a kind of oil, not very dissimilar to liquid honey.

Mouset informs us, that this insect makes it's appearance only in May, or the beginning of June. Linnæus affirms, that it's feelers are like small threads; that it has no wings; but that it is furnished with a sort of cases, about half the length of those members in others of the Beetle kind.

BEETLE, MILL. This insect has feelers like bristles, two horns on the tail, membranous cases to the wings, and a roundish and somewhat compressed margined breast. It is of a deep iron-colour, approaching to black; the shield, which lies over the breast, is plain and oval; and the cases of the wings are also of an oval shape, but somewhat shorter than the body, and a little transparent: there are three streaks upon each, the middlemost of which is raised, and the more inward hollow and compressed. On the tail there are two prickly feelers; and the legs are also prickly. The female has only the rudiments of wings, and their cases. This insect, which never appears during the day-time, is very common in mills, and the houses of bakers. Linnæus calls it the blatto.

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To these species of Beetles already described, several others might be added which are referred to this genus; but they differ considerably in many particulars of their conformation, and totally in their names.

BEEVE, SIBERIAN. This animal, which is of the cow-kind, is found in the country from which it receives it's name; and particularly in the vicinity of the Lake Baykal. The male has neither horns nor mane, but only rough curled hair on the top of it's head; and it's tail is like that of a horse: it's whole body, except it's legs and face, is covered with long straight hair; so that it bears but a very distant resemblance to the common species of neat cattle.

BEEVE HOG: This animal, which seems to be of a middle nature between a Beeve and a Hog, is of the height of an ass, but broader and thicker; it is of a whitish dun or cream-colour; the hair on the body is extremely thin, and rather resembles that of a hog than a cow: from the neck to the tail there is a row of bristles down the spine of the back, but not so strong as those of a hog; the tail is terminated with stiff bristles, and appears very much like that of an ass; the head is very long; the snout, though approaching to that of the cow-kind, has a little similitude to the snout of the hog; on the head there are two black flattish horns, bending inwards like a bow, and lying pretty close to the neck; it has no udder like a cow; but between the hind-legs there are two small teats which grow close to the body.

This very singular animal has been hitherto little noticed by naturalists. One of them was publicly exhibited in England a few years ago; and though it's owners pretended that it came from the East Indies, and that it's proper name was the bonasus, it was very unlike that animal.

BEEVES. A general name for oxen.

BEHEMOTH. A vast animal mentioned in the sacred writings; about which interpreters are extremely divided.

BEISSKER. A name applied by Gesner, and some other naturalists, to the fish commonly called *mustela fossilis*, a species of the cobitis, distinguished by Artedi by the name of the blueish cobitis with fine black longitudinal lines on each side. Schoenefeldt calls it the *pœcilia*; and Johnson, the *piscis fossilis*.

BELAVE. A name given by some of the ancient naturalists to the acus Oppiani; in English, the horn or gar-fish.

BELENNUS. A small anguilliform sea-fish, called by some naturalists blennis. It's figure approaches nearly to that of the English bull-head, or miller's-thumb; and is a very scarce species.

BELL-ANIMAL. A name given by writers on microscopical discoveries to a minute animal found at the roots of the common duck-weed. It's body bears some resemblance to a bell, and it is furnished with a very long and slender tail, by which it affixes itself to the roots of these little plants. These animals are usually found in clusters, or bunches; those of the same bunch have always a similar motion, very frequently contracting themselves, and afterwards expanding to the full length of their tails.

BELL-POLYPE. A particular species of polypus, the extremities of whose ramifications resemble bells.

BELLICULI; or, **BELLIRICI MARINI.** A species of sea-shells of an umbilical figure; sometimes

BEL

times of a white colour variegated with yellow, and, at others, of a yellow streaked with black lines, after the manner of snails.

BELLOWS-FISH. This animal, to which some naturalists give the name of the trumpet-fish, is about four inches long, and an inch and a half broad; it is covered with rough scales, and has a long snout almost equal to a third part of its whole body; the eyes are large, and their irides white; and on the back rises a very strong spine of a great length, to which there is a correspondent furrow on the back part.

BELLUÆ. The sixth order of the mammalia; the characters of which are, that their fore-teeth are obtusely truncated, their feet hooved, their walk heavy, and their food vegetables. The genera of the horse, hippopotamus, hog, and rhinoceros, belong to this order.

BELUGA. A large fish of the sturgeon kind, called by Artedi *accipenser tuberculis carens*. This fish greatly resembles the sturgeon in shape, except that its snout is shorter and thicker; and from its roe or spawn that delicious composition called caviar is made. In the Wolga, this fish is very common, as well as very large; particularly near the city of Astracan, where some Belugæ have been caught measuring thirty-six feet in length and eighteen in circumference, and have yielded two hundred weight of caviar. It is also found in the Don and other rivers; and likewise in the Baltic and Caspian seas.

This fish is farther remarkable for producing a calculus, or stone, called the Beluga stone, which is found in both sexes, but most commonly in the male: however, it is far from being common; for in a thousand fishes there is not sometimes found a single stone. In what part of the fish this stone is situated, is uncertain; but it is very evident that it is no natural part of the animal, but only a morbid concretion, like the bezoar stone, in the animal which produces them, or the calculus in human bladders. This stone is of various shapes and sizes, which is probably owing to its situation, as well as to other external causes; but it is usually either globular or oval: it is of a yellowish white colour; of a smooth and naturally-polished surface; generally from the size of a pigeon's egg to that of a goose; usually compact, ponderous, and solid; not friable, but requiring considerable strength to break it; and also easily yields to the saw, though this instrument defaces its internal texture, which is naturally very elegant and regular. The Beluga stone consists of several concentric coats, firmly adhering to each other, and inclosing a nucleus, which generally appears to be some heterogeneous substance. Being composed of regular and even striæ, running from the centre to the circumference, and representing, both in colour and form, the flakes of the *terra foliata tartari*, or the striated spiculæ of antimony; it is, on these accounts, very different from all other stones of the kind.

If the Beluga stone be scraped to a powder, and sprinkled on hot iron, it emits a faint urinous smell, and calcines into a light, insipid, greyish earth. The natives on the banks of the Wolga esteem it very highly for its many salutary qualities, particularly that of promoting delivery; and by them it is constantly prescribed in cases of the stone and disorders of the urinary parts.

BELULA BOS. A name given by Paulus Jovius to that species of the ray-fish called by the ancient Greek and Roman writers *bos marinus*;

BEZ

and, by the moderns, *raia oxyrinchus*; and is distinguished by Artedi under the name of the variegated ray with ten prickly tubercles on the middle of the back.

BELSEBUL. A species of the simia, with a bearded black tail.

BEMETRE. A name given by the Brazilian Portuguese to a greenish black-bird of the starling kind, which is very common in that country, and called by the natives *pitangua-guacu*.

BENLOIA. A name by which the Swedes distinguish that species of the cyprinus which we call the bleak; and is the *alburnus* of naturalists.

BENNET-FISH. This fish is a native of the African seas, and is frequently caught near the Cape of Good Hope: it is nearly as long and thick as a man's arm; and weighs from six to eight pounds. It makes a very beautiful appearance, having large scales of a deep purple colour, streaked with gold; the eyes are red; the mouth is small, and without teeth; near the gills there are two fins of a gold-colour; the tail is red, and looks like a pair of scissors when opened; the scales are transparent, the skin, when they are removed, appearing of a fine shining purple colour; the flesh is red, and divided into flakes by a sort of membrane; and, though somewhat dry and hard, it is nevertheless well-tasted, and easily digested.

BERFISCH. A German name for the common perca, or perch.

BERGANDER. An appellation given by some naturalists to the shell-drake, or burrough-duck, a very beautiful species of that fowl common on the coasts of Lancashire; but its flesh is by no means palatable.

BERLUCCIO. A small bird of the hortulanus kind, strongly resembling the yellow-hammer, but somewhat smaller and longer-bodied.

BEROE. A marine animal found on the British coasts, of a gelatinous, transparent nature, and of an oval or spherical form, from half an inch to an inch in diameter, divided like a melon into longitudinal ribs, each furnished with rows of minute fins, by means of which this creature, like the animalia infusoria, can swim in all directions with great facility.

Linnæus has joined the Beroe to the volvox, one of the animalia infusoria.

BERUS. A species of the coluber.

BEZOAR GOAT. An animal found in Asia Minor, and several other countries; to which Buffon gives the appellation of the pasan, and makes it a species of garelle. It has smooth black horns, sharply ridged on their upper parts, and hollowed on their exterior sides; these horns, which are close at their bases, are about a foot distant in their widest parts, and their length is about three feet: on the chin there is a large dusky beard, mixed with chesnut; the fore-part of the head is black, the sides being mixed with brown; and the rest of the animal is grey, or grey mixed with ferruginous. From the neck to the tail, along the ridge of the back, there is a black list; and the tail is likewise black.

Though this animal, in form and agility, resembles the stag, Monardus compares it to the he-goat; and asserts that its feet are the same with those of the goat.

The Bezoar Goat is one of those animals which yields that once valued alexipharmic the Bezoar-stone, a concretion formed of many coats encrusting a nucleus of heterogeneous matter found in the

the stomach and intestines. The word Bezoar is supposed to derive its name either from the pafan, or pafar, the animal which produces it; or from a word in the Arabic language signifying an Antidote or Counter-poison.

The Bezoar-stone is generally from the size of an acorn to that of a pigeon's egg; and the larger the stone, the more valuable it is esteemed, its price increasing like that of a diamond. A stone weighing four ounces was formerly sold in Europe for two hundred pounds; but, at present, these stones being of little estimation, the price has of course greatly fallen.

The Bezoar is of various colours; sometimes of a blood-colour; sometimes of a pale yellow; and, at other times, of all the shades between the above two colours: it is generally smooth and glossy; and has a fragrant smell, like that of ambergris, probably arising from the aromatic vegetables on which the animal feeds which produces it. It has been prescribed in vertigoes, epilepsies, palpitations, the colic, the jaundice, and, in short, in almost every disorder incident to humanity: in all of which, perhaps, it is alike efficacious, acting only as an absorbent, and possessing virtues equal to those of common chalk, or crabs-claws. Judicious physicians have therefore discarded it; and the use of this once-celebrated medicine is now chiefly confined to those countries where the knowledge of nature hath as yet made but little progress.

When this medicine was in its highest reputation, many arts were practised to adulterate it, and many countries endeavoured to discover a Bezoar of their own; thus we had occidental as well as oriental Bezoar, cow Bezoar, hog Bezoar, and monkey Bezoar: in short, there is scarcely an animal of the frugivorous kind which does not produce some of these concretions; and probably those of one creature are equally as efficacious as those of another.

BEZOLA. A truttaceous fish of the albula kind, called by Gesner the albula cærulea. It resembles the herring in shape; and is of a dusky blueish colour, not differing very essentially from the lavaretus.

BIB. This fish, to which Linnæus gives the name of the gadus luscus, grows to the length of a foot. The body is deep; the sides are compressed; and the scales, so far from adhering to the skin, as is asserted by some naturalists, are extremely deciduous: the eyes are covered with a loose membrane, which the Bib can inflate at pleasure, like a bladder; the mouth is small; and beneath the chin there is a beard about an inch long. The first dorsal fin consists of twelve rays; the second, of twenty-three; and the third, of twenty: the pectoral fins have about sixteen rays; the ventral, six or seven, of which the first ray is long and fetaceous; the first anal fin has twenty-seven, and the last twenty-one rays. The back is of a light olive colour; the sides are finely tinged with gold; the belly is white; the tail is black; and the anal fins are dusky, edged with lively white.

BIBIO. The wine-fly, a very small insect found frequently among empty wine-casks. It is produced from a small oblong red worm, very common in the sediments of wine.

BICAUDA. A fish of the xiphias or sword-fish kind, about five feet long, and a foot and a half broad at the breast, tapering gradually towards the tail. It is covered with a thick rough skin; and has several short bony prickles on its back and

sides, which are of a brown colour: the belly is white; and the fins are all of a brownish grey, the back one being adorned with several beautiful black spots.

The name of this fish is derived from Bis, Double; and Caudia, a Tail: and is esteemed very palatable food.

BIDET. A nag, or little horse.

BIGGEL. A quadruped nearly about the colour and magnitude of a rein-deer; and, according to Mandelsloe, is a native of the East Indies. Its head is like that of a horse; its mane is like an ass's; it has black cloven-feet; and is furnished with two horns.

BIL. A name given by some naturalists to a particular species of cod-fish.

BILLARD. An English name for the young of the coal-fish, or rowling pollack, up to a certain size; as the cod, to a certain magnitude, is called a colling.

BIOTA. A name by which Dr. Hill expresses the polype. This creature is of a cylindric, but variable figure; and the tentacula are arranged in a single series round the aperture of the mouth, at the extremity of the body.

Linnæus gives this animal the name of hydra, probably from the reproduction, or repullulation, of its parts when cut off; and the name Biota seems likewise applicable on the same account. There are several species of the Biota.

BIRD. The characters of this class of animals are, that their bodies are covered with feathers; that each of them is furnished with two legs and two wings, and a hard bony bill; and that the females are oviparous.

This beautiful race of animals seems formed to embellish our forests, to amuse us in our walks, and to exclude solitude from our most shady retirements. From them man has nothing to fear; their pleasures, their desires, and even their animosities, serve only to enliven the general picture of nature, and to cheer the pensive and contemplative mind.

Every part of nature is furnished with its proper inhabitants: the woods, the waters, and the depths of the earth, have their respective tenants; while the passive air, and those tracts of seeming space too elevated for man to ascend, are traversed by multitudes of the most beautiful feathered beings. Though all ranks and orders of animals seem adapted for their destined situations, none are more apparently so than birds; they share the vegetable spoils of the earth in common with the quadrupeds; to compensate their want of strength, they are supplied with swiftness; and, in order to avoid those enemies which Providence has not fitted them to oppose, they are endowed with the faculty of ascending into the air. Birds, indeed, seem entirely formed for a life of escape, every part of their anatomy being calculated for swiftness; and, as they are designed to soar on high, all their parts are proportionably light.

Though, in the scale of nature, it must be admitted that Birds are inferior to quadrupeds, as being less imitative of human endowments; they certainly surpass fishes and insects, not only with respect to the structure of their bodies, but in their superior sagacity.

Of man, the most perfect animal, there are but a very few species, and the discriminations between them are not strongly marked; of quadrupeds, the kinds are more numerous; Birds are more various still;

still, and fishes yet more; but insects afford so very great a variety, that they elude the researches of the most inquisitive naturalists. Quadrupeds are observed to bear some distant resemblance, in their internal structure, to man; but that of Birds is entirely dissimilar: formed chiefly to inhabit the empty regions of air, all their parts are suited to that purpose; the shape of their bodies, which is sharp before, in order to facilitate their passage through the yielding element, rises by a gradual swell, and falls off in expansive tails, which serve to keep them buoyant while their fore-parts are cleaving the air. They have been, for this reason, not unaptly compared to a vessel making it's way through the water; the trunk of the body of the animal answering to the hold, the head to the prow, the tail to the rudder, and the wings to the oars.

The external formation of Birds affords matter for our admiration: particularly the position of their feathers, which generally tend backwards; and thus, by lying one way, and over each other in an exact and regular order, answer the threefold purpose of warmth, speed, and security. Those parts of the feathers next their bodies are furnished with a warm and soft down; while the external ones are arrayed with double beards in two ranks, longer at one end than at the other: these beards consist of rows of little thin laminæ, disposed and inserted in lines, as perfect and regular as if their extremities had been cut off by the most curious artist. But, lest these feathers should receive any injury from their violent attrition against the air, or imbibe the moisture of the atmosphere, Birds are furnished with glands behind, containing proper quantities of oil, which they occasionally press out with their bills, and spread over all those feathers which require smoothing: these glands, which are situated on their rumps, are furnished with apertures, round which grow small tufts of feathers somewhat like painters pencils. Such poultry, however, as live principally under cover, and seldom expand their wings in flight, have a smaller quantity of this fluid than those which frequent the open air; the feathers of a hen, for instance, are pervious to every shower; but those of a swan, a goose, a duck, or a moor-hen, as well as all such Birds as nature has directed to an aquatic life, are dressed with oil from the very first day of their leaving their shells; and thus: their stocks of fluid are proportioned to the necessary degrees of consumption. Their flesh, indeed, contracts a flavour from it, which in some is so very rancid as to be totally unfit for food; but if their flesh is injured by it, their feathers are improved, and made more valuable for all the domestic purposes to which they are usually applied.

The feathers with which Birds are clothed are equally worthy of admiration: the shaft of each is formed proportionably strong, but hollow below, in order to contribute to it's lightness; and is filled above with pith, to afford nourishment to the beard springing from the shaft of the feather on either side. These feathers, with respect to their lengths and strength, are generally so placed, as that the largest and strongest may have the greatest share of duty in flight. Nor is the vane, or beard, of the feather, formed with less wisdom or art: it does not consist of one continued membrane, because, if that were broken, it could not easily be repaired; but is composed of many layers, somewhat resembling feathers, and lying against each other in close conjunction. Towards the shaft of the feather, these

layers are broad, and of a semicircular form, for the purpose of adding to their strength, as well as to keep them closer to each other when in action. They, however, grow slender and taper toward the exterior edge of the vane, for the purpose of contributing to their lightness. On their inferior sides, they are thin and smooth; but their upper external edges are parted into two hairy margins, having a different sort of hair on each side, broad at the bottom, and slender and bearded above. By this mechanism, the hooked beards of one layer always lie near the straight beards of the succeeding one, and by that means lock and hold each other.

The wings of those Birds which fly are usually placed at those parts of their bodies which serve to poise and support them in the air: they answer to the fore-legs in quadrupeds; and at their extremities they have a finger-like an appendix, usually called the bastard-wing. This auxiliary instrument of flight is likewise furnished with quills, which differ from the common feathers only in the largeness of their size, and their springing from the deeper part of the skin, their shafts lying almost close to the bone: the beards of these quills are broad on one side, but more narrow on the other; and both contribute to the progressive motion of the Birds, and the closeness of their wings.

All Birds are furnished with two very strong pectoral muscles on each side of their breast-bones. In quadrupeds, as well as in men, the pectoral muscles are trifling in comparison with those of Birds. In the former, the muscles of the thighs, and the hinder-parts of the body, are by far the strongest: but, in Birds, it is far otherwise; the pectoral muscles which give motion to their wings, or arms, are amazingly strong; while those of their thighs are weak and slender. By means of these, a Bird can move it's wings with a degree of strength which is almost incredible: the flap of a swan's wing would break the leg of a man; and a similar blow from an eagle has been known to occasion instant death. Such, consequently, is the force of the wing, and such it's lightness, as to be inimitable by human art: and as no machines which human skill can contrive are capable of imparting so great power to so light an apparatus, the art of flying with artificial wings, so often and so fruitlessly sought after, appears to be totally unattainable.

In all Birds, nocturnal ones excepted, their heads, in proportion to their bodies, are smaller than those of quadrupeds, that they may with greater facility divide the air in the act of flying, as well as prepare a more easy passage for their bodies. Their eyes also are more flat and depressed than those of quadrupeds; and their pupils are encompassed by small plates of bone under the exterior coats of the organs of sight, in order to strengthen and defend them from injuries. Birds have also a kind of skins, called the nictitating membranes, with which they can cover their eyes at pleasure, as with a veil, though their eye-lids continue open: these membranes originate from the greater or more obtruse angles of their eyes; and probably serve to wipe, cleanse, and moisten their surfaces.

The eyes of Birds are admirably adapted to vision, by a particular expansion of their optic nerves, which renders the impression of external objects more vivid and distinct. From this peculiar conformation, it appears that the faculty of sight in Birds is infinitely superior to that of other animals; and, indeed, is indispensably necessary to their support and security. Were the eye less perfect, the Bird,

Bird, from the rapidity of it's motion, would probably strike against almost every object in it's way; as well as be totally incapable of discerning it's proper food when soaring in it's own element. Thus the kite, though at an astonishing height from it's prey, darts on it with the most unerring aim; and the hawk descends the lark at a distance far beyond the reach of the human eye.

All Birds are destitute of external ears, being only furnished with holes for the purpose of conveying sound to their auditory ducts. The horned owl, indeed, and a few other Birds, seem to have external ears; but this appearance is occasioned by the projection of some feathers beyond the rest on each side of their heads. It is probable, however, that those feathers which encompass the ear-holes of Birds supply the defects of their exterior ears, so far as they are instrumental in transmitting various sounds to their internal sensories; and the extreme delicacy and sensibility of their organs are easily proved by the facility with which some Birds learn musical notes, as well as by the great exactness of their pronunciation of words.

The olfactory nerves in the generality of Birds appear equally curious: some of the feathered tribes scent their prey at a vast distance; and others, by the sense of smelling, avoid their insidious pursuers. In decoys for catching ducks, those who attend on that business always keep pieces of turf burning near their mouths, on which they constantly breathe, lest the fowls should smell them, and consequently avoid their lures. The universality of this practice puts the propriety of it beyond a doubt; and proves the extreme delicacy in the olfactory sensation with which this species at least of the winged creation is endowed.

The legs and feet of Birds are lightly constructed, for their easier transportation through the air. The toes of those which are calculated for swimming in the water are webbed; but, in other Birds, they are disjoined, the better to enable them to retain objects, or cling to the branches of trees with security. Such Birds as are furnished with long legs have also long necks, as they would otherwise be incapable of picking up their food: swans and geese, however, whose necks are extremely long, have very short legs; and are for that reason better adapted for swimming than walking. Thus every external part appears fitted to the life and situation of the animal. Nor are the inward parts, though not immediately appropriated to flight, less necessary to safety: the bones of every part of the body are extremely thin and light, and all the muscles very slight and feeble, except those which afford motion to the wings; while the tail serves to counterbalance the head and neck, to guide the animal's flight like a rudder, and to assist it in it's ascent and descent.

If we minutely examine the internal parts of Birds, we shall find the same wonderful conformation fitting them for living in air, and increasing the surface by diminishing the solidity. Their lungs adhere to the sides of their ribs and backs; but the extremities of the branches of their wind-pipes open into them; while these have a communication with the cavities of their bellies, and convey the air drawn in by breathing into certain receptacles resembling bladders, extending the whole length of their bodies. Nor are these openings obscure, and difficult to be discerned; for a probe thrust into the lungs of a fowl will easily find a passage into the belly; and air

blown into the wind-pipe will be seen to distend the animal's body. In quadrupeds, this passage is intercepted by the midriff; but, in fowls, the communication is obvious, and consequently they with much greater facility take long and large inspiration. Sometimes also the wind-pipe makes many convolutions within the body of the Bird, and it is then called the labyrinth; but of what use these turnings or windings are to particular Birds, neither naturalists nor anatomists have hitherto been able to develop. This difference of the wind-pipe is often found in Birds that, to all appearance at least, are of the same species: thus, in the tame swan, the wind-pipe makes but a straight passage into the lungs; while, in the wild swan, it pierces through the breast-bone, and has several turnings before it comes out again and proceeds to enter the lungs. These convolutions, however, are not instrumental in forming the voice of the Bird; since those fowls which are destitute of them are nevertheless vocal. We cannot therefore ascertain from whence some Birds derive the loud and various modulations in their warblings: but we may venture to assert, that fowls, in proportion to their bulk, have louder voices than animals of any other kind; for the screaming of a peacock is as loud as the bellowing of an ox.

Though all Birds, properly speaking, have but one stomach, it is, however, very unlike in different kinds. In all the rapacious tribes the stomach is peculiarly formed: the œsophagus, or gullet, in them, is found to be replete with glandulous bodies, which serve to dilate and macerate their food as it passes into their stomachs, which are always very large in proportion to the sizes of the Birds, and are generally enveloped in fat, in order to increase their warmth, and assist their digestive powers. The intestines of frugivorous Birds are differently formed from those of the rapacious kinds: the gullet, in them, dilates just above the breast-bone, and forms itself into a pouch or bag, called the crop, which is replete with salivary glands, serving to soften and moisten the food which it contains; and these glands are furnished with longitudinal openings, which emit a whitish and viscous substance. The dry food of the Birds, after being macerated for a convenient time, passes into their bellies; where, instead of a soft, moist fluid, as in the rapacious kinds, it is macerated between two pairs of muscles, commonly called the gizzard, internally covered with stony ridgy coats, and almost cartilaginous: these coats, rubbing against each other, are capable of bruising and attenuating the hardest substances, their action being similar to that of the grinding-teeth in man and other animals. Thus the organs of digestion in Birds are in a manner reversed. Beasts grind their food with their teeth; after which it passes into their stomachs, where it is softened and digested: on the contrary, Birds first macerate and soften it in their crops, and then it is ground or comminuted in their stomachs or gizzards. Birds are also careful to pick up sand, gravel, and other hard substances; not to grind their food, as has been supposed, but to prevent the too violent action of the coats of the stomach against each other.

Many species of Birds are provided with two appendices, or blind guts, which in quadrupeds are always found single. Among such Birds as are thus supplied, are all carnivorous fowls: and all Birds of the sparrow kind have very small and short ones; while water-fowl, and Birds of the

poultry kind, have the longest of all. There is still another appendage, resembling a small worm, observable in the intestines of Birds; but which is nothing more than the remainder of that passage by which the yolk was conveyed into the guts of the young chicken, while yet in the egg, and under incubation. The outlet of that duct which conveys the bile into the intestines, is in most Birds a great way distant from the stomach; which circumstance may probably arise from the danger there would be of the bile's regurgitating into the stomach during their various rapid motions.

Though Birds are destitute of urinary bladders, they have large kidneys and ureters by which this secretion is made, and carried away by one common canal. 'Birds,' says a celebrated anatomist, 'as well as serpents, which have spongy lungs, void but little water, because they drink but little: they therefore have no need of bladders; but their urine distils down into the common canals designed for the reception of the other excrements of their bodies.' From this simple conformation of these animals, it should seem that they were obnoxious to few diseases; and, in fact, it is so: there is one, however, to which they are subject, and from which quadrupeds are in a great measure exempted, namely, their molting; for all Birds annually change their old coverings for new ones. During the molting season, they always appear disordered: those most remarkable for their fierceness, at that time lose all their spirit; and such as are of weakly constitutions often expire under this natural distemper. No feeding can then maintain their wonted strength: they cease to breed; and that nourishment which at other times would go to the production of their young, is then wholly absorbed by the growing plumage. Those persons, however, who have the management of singing Birds, adopt the following method of accelerating this molting-time: they inclose the Birds in dark cages, where they keep them excessively warm, and thereby throw the poor little animals into an artificial fever; this practice hastens the molt; their old feathers experience a premature death, and new ones shoot forth more brilliant and beautiful than the former. This method is supposed to improve the singing of the Birds, as well as to increase their vivacity; but scarcely one Bird in three survives the dangerous experiment. Nature, unassisted by art, performs the operation of molting in the following manner: the quill or feather, when first protruded from the skin of the Bird, and arrived at it's full size, increases in hardness as it does in age, and receives a kind of periosteum, or skin, round the shaft, by which it seems attached to the animal. By degrees it's sides, or quill part, thickens, but it's whole diameter shrinks and decreases. Thus, by the thickening of it's sides, all nourishment from the body becomes more sparing; and, by the decrease of it's diameter, it becomes more loosely fixed in it's socket, till at length it drops out. In the mean time, the rudiments of an incipient quill are beginning below, and the skin forms itself into a little bag, which is fed from the body by a small vein and artery, and which every day increases in size till it is protruded. While the one end vegetates into the beard or vane of the feather, that part attached to the skin still remains soft, and receives a constant supply of nourishment, which is diffused through the body of the quill by that extremely light substance which we find in it's boss or hollow: this substance, which

as yet seems destitute of a name, supplies the growing quill with it's proper nourishment in the same manner as the umbilical artery does an infant in the womb. When, however, the quill is come to it's full growth, the vein and artery become less and less, till the little opening by which they communicate with the quill becomes wholly obliterated; and the quill, thus deprived of nourishment, continues in it's socket for some months, till at last it shrinks; and leaves room for a repetition of the same process of nature.

The molting season, with respect to the generality of Birds, begins about the end of summer, and lasts till the middle of autumn; and many of the animals struggle with this malady throughout the winter also. Nature, however, has kindly ordained that, at a time when the fewest provisions are to be found, the appetites of Birds should be the least craving. At the beginning of spring, when their food becomes plentiful, the strength and vigour of these animals return; and the bounty of Providence, together with the mildness of the season, incites them to mutual affection: their vital spirits also, which were in a great degree locked up during the winter, now begin to expand. Those warblings which had long been hushed, begin to gladden the fields; and every grove and every bush resounds with the melodious concert. But this delightful harmony of the grove, so much admired by man, is by no means intended solely for his amusement: it is usually the call of the male to the female; his efforts to soothe her during the times of incubation; or a controversy between two males for the affection of some common favourite.

At the approach of spring, Birds begin to pair, and to provide for the support of their future progeny; and the loudest notes, on such occasions, generally proceed from the tuneful throats of the males, while the females express their consent in short interrupted twitterings. The compacts then entered into between the two sexes, are, for the season at least, faithfully observed: but many Birds live together for years, with inviolable fidelity; and when one of them pays the debt of nature, the other does not long survive the loss. We must not, however, expect to find this steadfast attachment very prevalent among the poultry in our yards, where their freedom is abridged, and their manners are contaminated by slavery: rather let us look for it in the fields and the forests, where nature retains her unadulterated simplicity; where the number of males is generally equal to that of the females; and where every little animal seems no less pleased with it's progeny, than wedded to it's mate. Were it possible, indeed, to compare the sensations of irrational animals, the male of all wild Birds seems to share an equal pleasure with the female in their young brood; and all his soothing melodies seem only directed to that important period when they are both to become parents, and to nourish their common progeny: and, on the arrival of that season, they both seem transported with joy; every little action witnessing their pride, their importance, and their parental solicitude.

The business of fecundation being performed, the female begins to lay her eggs. Such of them only as have been impregnated by the male become prolific; while those which have been otherwise produced continue sterile, and soon become addled through incubation. Previous, however, to laying, a nest is prepared; the building of which

is performed with no small degree of assiduity and apparent design. Some naturalists have asserted, that Birds of one kind always construct their nests in the same manner, and of the like materials; notwithstanding which, it is certain that they vary as the materials, places, or climates, differ. The red-breast, for instance, in some parts of England, builds its nest of oak-leaves; and, in other parts, with moss and hair. Some Birds, which in this island form very warm nests, are very indifferent about that circumstance in the tropical climates, where the natural heat of the weather promotes incubation. In general, however, every species of Birds has a peculiar kind of architecture, adapted either to the number of eggs, the climate, or the heat of the bodies of the respective animals. Where the eggs are numerous, it is then necessary that the nest should be warm, in order that the animal heat may be equally diffused to all. Thus, the wren, as well as all the other small Birds which have many eggs, require very warm nests: on the contrary, the plover, the eagle, and the crow, which have but few eggs, are not so solicitous in this respect, their bodies being sufficiently large to cover the small number on which they sit.

The difference of climate sometimes occasions vast alterations in the construction of the nests of Birds. Some water-fowl, which build very slovenly nests with us, in the more frigid regions of the north are very particular in their structure: for they there take every precaution to keep them warm; and some of them even strip the down from their own breasts, for the purpose of lining their nests with greater security. In general, however, all Birds, when hatching, resort to those climates and places where their food is found in the greatest plenty. Aquatic Birds, as well as the largest of the land kinds, select such situations as are most remote from man; their food, in general, being different from that which is cultivated by human labour. Some Birds, which regard the serpent as their deadliest foe, build their nests depending from small boughs, and form their entrances from below; thereby equally securing them from the serpent and the monkey tribes: but small Birds, which feed upon fruits and corn, make use of every precaution to conceal their nests from man; while the great Birds, remote from human society, employ every art to render theirs inaccessible to wild beasts or vermin.

While the female is hatching, nothing can exceed her patience; neither the calls of hunger, nor the near approach of danger, being capable of driving her from her nest. Though sat when she begins to sit, before the time of incubation is expired, she is usually reduced almost to skin and bone. Ravens and crows, while their females are sitting, take care to supply them with food: but this is not the practice of most of the smaller Birds, the males of which, during the whole time, sit upon some neighbouring tree, and soothe the females with their songs; frequently taking their places when they are weary, and continuing on the eggs till their return. Sometimes, indeed, the eggs acquire too great a degree of heat; and, in that case, the females remove from them, in order to allow them time to cool a little; but afterwards return with pleasure and perseverance to resume their task.

Such is the power of instinct in animals of this class, that they appear to be driven, as it were, from one appetite to another, and continue almost

passive under its influence. We cannot apply reason to such a passion, since the first dictates of that principle would be self-preservation. 'Take a brute,' says Mr. Addison, 'out of his instinct, and you will find him wholly deprived of understanding. With what caution,' continues he, 'does the hen provide herself a nest in places unfrequented, and free from noise and disturbance! When she has laid her eggs in such a manner that she cannot cover them, what care does she take in turning them frequently, that all parts may partake of the genial warmth! When she leaves them, in order to provide for her necessary sustenance, how punctually does she return before they have had time to cool, and become incapable of producing an animal! In the summer, you see her giving herself greater freedoms, and quitting her care for above two hours together; but in winter, when the rigour of the season would chill the principles of life, and destroy the young one, she grows more assiduous in her attendance, and stays away but half the time. When the birth approaches, with how much nicety and attention does she help the chick to break the prison! not to take notice of her covering it from the injuries of the weather, providing it with proper nourishment, and teaching it to help itself; nor to mention her forsaking the nest, if, after the usual time of reckoning, the young one does not make its appearance. A chymical operation could not be followed with greater art or diligence, than is seen in the hatching of a chick, though there are many Birds which shew an infinitely greater sagacity: yet, at the same time, the hen, which has all this seeming ingenuity, considered in other respects, is without the least glimmerings of thought or common sense: she mistakes a piece of chalk for an egg, and sits upon it in the same manner; she is insensible of any increase or diminution in the number of those she lays; she does not distinguish between her own and those of another species; and, when the birth appears, though of ever so different a kind, will cherish it for her own. A hen, followed by a brood of ducks, will stand affrighted at the edge of a pond, trembling for the fate of her young, which she sees venturing into so dangerous an element. As the different principles which actuate these different animals cannot be termed reason, so, when we call it instinct, we mean something of which we have no knowledge. It appears to me the immediate direction of Providence; and such an operation of the Supreme Being, as that which determines all the portions of matter to their proper centres.'

Indeed, the production of their young seems to be the great era of felicity in animals of this class. At that time, nothing can exceed their industry and spirit; the most timid becoming courageous in the defence of their young: while those of the rapacious kind are at that season uncommonly fierce and active; they hasten with their prey, yet throbbing with life, to their nests, and early initiate their young to scenes of slaughter and cruelty. Nor are those of a milder nature less busily employed: the little Birds then discontinue their singing, being engaged in the more important pursuits of common subsistence.

While the young continue in the nest, the old ones provide them with a proper supply of food; and, that no individual may be overlooked, each is served in its turn. If they perceive that man has been busy with their nest, or has handled their little ones, they abandon the place by night, and provide

provide their brood a more secure retreat. When the whole family are fully plumed, and capable of avoiding danger, they are led forth in fine weather, and taught the art of providing for their own subsistence, by being conducted to those places where their food is most likely to be found: they are also at the same time instructed in the method of picking it up, and carrying it away; and are then re-conducted to the nest, where they continue a day or two longer. At length, when they are fully qualified to shift for themselves, the old ones again take them abroad; and, after leading them to the accustomed places, leave them to shift for themselves; and all connection ceases.

Those Birds which are hatched earliest in the season are the strongest and most vigorous; while such as have been delayed till the middle of summer are more tender and feeble, and sometimes incapable of sustaining the rigours of the ensuing winter. The very Birds themselves seem to be so sensible of this difference, that they endeavour to breed early in the spring; but, if their endeavours are obstructed, by having their nests robbed, or by any other accident, they still persevere in their efforts for a progeny; and it sometimes happens that they are retarded by a variety of accidents even to the middle of winter. What number of eggs a Bird is capable of laying in one season, has never yet been ascertained; but it is certain that such as would have laid but two or three at the most, if their nests be robbed, or their eggs stolen, will lay above ten or twelve. A common hen, if properly fed, will lay upwards of a hundred from the beginning of spring to the latter end of autumn. In general, however, it is observed, that the smallest and weakest tribes are the most prolific; while the strong and the rapacious are abridged by sterility. Thus, such kinds as are easily destroyed, are as easily repaired; and Nature, where she denies the power of resistance, generally compensates the defect by bestowing extraordinary fertility.

Birds in general, though naturally timid, are seldom frightened away from their usual haunts: they are perfectly formed for a wandering life, and supplied with powers to satisfy all their appetites. But, though they are so well qualified for changing their retreats with ease and rapidity, most of them remain contented in those districts in which they have been bred, seldom exerting their powers in proportion to their endowments. The rook, if undisturbed, will never desert its native grove; the blackbird does not often relinquish its usual haunts; and the red-breast, though seemingly mild, claims a certain district, from whence it seldom moves, but drives from thence every intruder of its own species without pity or remorse.

Hunger, climate, and fear, are to Birds the chief incentives to migration; and from one or other of these powerful motives, those which are called Birds of passage annually forsake us for some time, and afterwards make their regular and expected returns. Though nothing, perhaps, has excited the curiosity of mankind more than these annual migrations, few subjects continue so much enveloped in uncertainty. The cause of their retreat from some of our European islands is generally supposed to originate either from a scarcity of food at certain seasons, the alterations of the climate, or the want of a secure asylum from the persecution of man during the time of incubation and fostering their young. Thus, in Sweden, at the approach of winter, the starling, no longer finding subsist-

ence in that kingdom, descends annually into Germany; and the hen-chaffinches of the same country are observed to fly through Holland in large flocks about the beginning of autumn, in order to pass their winters in a milder climate.

Some Birds are known to undertake journeys, the length and fatigues of which would intimidate human perseverance. In spring, the quails forsake the burning heats of Africa for the milder sun-beams of Europe; and, after continuing with us during the summer, wing their way back to enjoy the temperate air of Egypt, as soon as it begins to be delightful. These peregrinations appear to be concerted some days previous to their departure: multitudes of them assemble in some open place; and, by a kind of chattering, seem to settle the method of procedure. Their plan of operations being determined on, they all take flight together; and often appear hovering in such prodigious numbers over the sea, that to mariners they appear like a cloud resting on the horizon. The boldest, strongest, and by far the greatest number, carry their plan into execution: but others of their company grow weary by the way; and, quite exhausted by the fatigues of their flight, drop into the sea, and sometimes even on the decks of ships.

Among the amazing number of water-fowl which frequent our coasts, it is curious to reflect how few are known to breed on them. It is certain, however, that they cannot quit this country merely for the want of food; though to obtain a more secure retreat may perhaps be their chief motive. This country is probably now too populous for Birds so shy and timid: when it was less cultivated, and contained extensive tracts of woods and marshes, many species of Birds which now migrate, remained with us throughout the year. The great heron and the crane, which have long forsaken this country, in former times bred familiarly in our marshes, seemed to animate our fens, and, like the generality of cloven-footed aquatic fowls, built their nests on the ground. They had then but little to dread: the surrounding marshes protected them from all carnivorous quadrupeds, and their own strength from Birds of prey; but, in proportion as agriculture increased, they were more and more disturbed by the intrusions of man; and were at length obliged to seek other retreats, where they might live more remote from dangers and alarms.

Though the tribes of the duck kind are very numerous, we know of no more than five which breed in this country; namely, the tame swan, the tame goose, the sheldrake, the eider-duck, and the wild duck: the rest unite with that amazing quantity of wild fowl which inhabit the dreary lakes and deserts of Lapland, where they perform, in undisturbed security, the duties of incubation and nutrition. There are, indeed, but few of this kind which cannot be traced to the northern deserts; and to countries abounding with lakes, rivers, swamps, and mountains covered with thick and gloomy forests, which afford the most perfect safety to these naturally timid animals: from the thickness and extent of the woods in those regions, the ground continues moist and penetrable during the summer season; and the woodcock, snipe, and other Birds with slender bills, can feed with convenience and ease; while those which are web-footed find plenty of food from the numbers of insects which swarm there in incredible numbers. It is not therefore astonishing that amazing numbers of fowls should descend

scend from these regions at the approach of winter; numbers to which the army of Xerxes was but comparatively small; and which Linnæus has observed, for eight whole days and nights successively, to cover the surface of the River Calix.

These fowls generally migrate from the northern countries in the month of September; and disperse themselves over all the southern parts of Europe. To observe the order of their flight, is indeed amusing: sometimes they range themselves in a long line; and, at others, they march angularly, forming two lines which unite in the centre. The leader at the point seems to cleave the air, as if to facilitate the passage of those which are to follow; and, when weary of this laborious station, retreats into one of the wings of the file, and is succeeded by another pilot. About the beginning of October they make their first appearance with us, circulating round our shores; and, when compelled by severe frost, repairing to our lakes and rivers. Some, indeed, of the web-footed fowls, of hardier constitutions than others, endure the rigours of the northern climates during the whole winter; but, when this season is uncommonly severe, they are obliged to betake themselves to more southern skies; and at such periods only we are visited by the diver, the wild swan, and the swallow-tailed sheldrake.

That irrational animals should be able to perform such long journies, and how they should know when and whither to direct their courses, has often afforded matter of contemplation to the curious: but the same instinct which governs all their other actions, certainly operates here also. Indeed, they rather follow the weather than the country; and, when they perceive the variations of the air in their favour, they proceed in their journey till they discover land to rest on. It can hardly be supposed that they retain any remembrance of that country in which they had spent a former winter: nor is it probable that they can discern, from their height in the air, those regions to which they travel; since, though they should ascend even for miles, the convexity of the globe must interrupt their view.

There is, however, a circumstance attending the migration of swallows, which envelopes this subject in great obscurity. At the approach of winter in Europe, it is universally allowed that they are seen in amazing numbers migrating into other climes; and that their return into this country is about the beginning of summer: but it is equally true, that many of them continue here during the winter in a state of torpitude, making old walls, or the hollows of trees, the places of their retreat; and even sinking in clusters to the bottoms of the deepest lakes, where they repose in perfect security.

It seems difficult, however, to account for the various methods which these animals make use of for eluding the severities of winter. It has been supposed by some, that their blood loses it's motion through the cold: but if Buffon, who is said to have placed many of this tribe in an ice-house, found that the same cold, by which their blood was congealed, was also fatal to their existence; it is doubtful whether there may not be a species of them, though apparently like the rest, formed internally so as to be fitted for a state of insensibility during the winter in this country. Some naturalists, indeed, have suggested, that the swallows which remain thus torpid may be only such as are either too weak, or were hatched too late, to join the ge-

neral convoy: yet on these last Buffon tried his experiment; and they all died under the operation.

But though some Birds, by emigrating, make their habitations in different parts of the earth, almost every climate has fowls peculiar to itself. Those of the temperate zone are not very remarkable for the beauty of their plumage; but the smaller kinds fully compensate this defect by the melody of their voices. The Birds of the torrid zone are very bright and vivid in their colours, but they in general have either harsh and disagreeable voices, or are totally silent: the frigid zone, on the contrary, where the adjacent seas abound with fish, is stocked with Birds of the aquatic kind, in much greater plenty than in Europe; and these are generally either cloathed with warm coats of feathers, or have large quantities of fat lying beneath their skins, which serve to defend them from the rigours of the climate. In all countries, however, Birds are longer lived than quadrupeds or insects of the same climates. Even the life of man is short when compared with the lives of some Birds: it is said that swans have sometimes lived three hundred years, and that geese have been often known to exceed fourscore; while linnets, and other small Birds, seldom survive fourteen or fifteen.

Birds are in general less than quadrupeds; that is, the largest of the one class is far superior in magnitude to the largest of the other. The ostrich, which is the biggest of the Bird tribe, bears no proportion to the elephant; and the smallest humming-bird, the most minute of the class, is considerably less than the mouse. In these the extremities of nature are plainly discernible: the ostrich, seemingly covered with hair, and incapable of flight; approaches the quadruped class; while the humming-bird, which hardly exceeds the humble-bee in magnitude, and has a fluttering motion, seems nearly allied to the insect race. But these extremities are rather objects of human curiosity than utility: it is the middle order of Birds which man has taken under his protection, and which administers to his pleasures and his necessities. Wild Birds are, for the most part, of the same magnitudes and shapes; and still retain strong marks of their original nature. But it is far otherwise with domestic fowls: these, changing at the will of man, and according to the variety of climates to which they are consigned, the food with which they are supplied, and the purposes for which they are employed, vary in their colours, shape, and magnitude, as well as in the nature and taste of their flesh.

That Birds are capable of receiving instruction, is abundantly manifest. A very surprising instance of this kind was seen a few years ago in London; where a Canary Bird was taught to pick up the letters of the alphabet, and so to arrange them at the word of command, as to spell the name of any person in company; while the motions which on this occasion were given by the master, and obeyed by the little animal, eluded the discernment of every spectator.

The remarkable docility of the hawk, the parrot, the magpye, the bullfinch, and a variety of other Birds, can hardly have escaped the notice of the most superficial observers of nature.

Birds are distinguished either by their living on the land or in the water; and both classes are easily known by their legs and toes. The toes of all land Birds are divided, without any membranes or webs between them; and their legs and feet serve for the purposes of running, grasping, and climbing.

climbing. The legs and feet of water-fowls, on the contrary, are adapted either for wading in the water, or swimming on it's surface. The legs of those which wade are usually long and naked; and the toes of those which swim are webbed together, as in the feet of a goose; which serve, like oars, to impel them forward with greater velocity. The formation of land and water fowls is, therefore, as distinct as their habits; and Nature herself, in methodizing animals of the feathered creation, seems to offer us this simple distribution. But, as the number of Birds already known amounts to near a thousand, and new species are daily adding to the catalogue, it is not sufficient to be able to distinguish a land from a water fowl; we ought also to be capable of making a discrimination between the different sorts of Birds, and even the varieties in the same kind, when they are presented to our view.

Linnæus divides Birds in general into six classes; namely, the rapacious kind, the pye kind, the poultry kind, the sparrow kind, the duck kind, and the crane kind; the various sorts of land Birds being comprehended in the four first, and those which belong to the liquid element in the two last.

Birds of the rapacious kind constitute that class of carnivorous animals which live by rapine: they are distinguished by their beaks, which are hooked, strong, and notched at the points; by their short muscular legs, their strong toes, and their sharp and crooked talons; by the strength of their bodies, and the impurity of their flesh; by the nature of their food, and by the cruelty and ferocity of their manners.

The beaks of Birds of the pye kind are differently formed from those of the rapacious tribes, which in some degree resemble a wedge, being fitted for the purpose of cleaving: their legs are short and strong; their bodies are slender and impure; and their food is miscellaneous. They breed in trees; and the females are fed by the males during the time of incubation.

The bills of Birds of the poultry kind are somewhat convex, for the purpose of gathering their food; the upper parts of their beaks hang over the lower; their bodies are fat and muscular; and their flesh is white and pure. They live principally on grain, which is moistened in their crops; they make very inartificial nests on the ground; lay a great number of eggs; are strangers to connubial fidelity; and, unlike the other classes of Birds, are promiscuous in their amours.

All the beautiful and vocal classes of Birds which adorn our fields and groves, are comprehended under the sparrow kind. Their bills resemble a forceps; their legs are formed for hopping along; and their bodies, which are tender, are pure in such as feed on grain, but impure in such as feed on insects. They chiefly inhabit trees: many of them shew abundance of design in the structure of their nests; and they are remarkable for their fidelity in the connubial compact.

The bills of Birds of the duck kind, which are smooth, covered with skin, and nervous at the points, serve as a kind of strainers to their food. Their legs are short, their feet are formed for swimming, and their toes are connected by membranes. They pass the greatest part of their time in the water, but generally breed on land.

The bills of Birds of the crane kind are formed for the purposes of searching and examining the bottoms of pools; their legs are long, and adapted for wading; their toes are not webbed;

their thighs are half-naked; their bodies are slender, and covered with thin skins; their tails are short; and their flesh is savoury. They live on animal food, and generally build their nests on the ground.

Such are Linnæus's divisions of Birds; which, at first sight, appear natural and comprehensive: but he who, while attending to such arbitrary distributions, should imagine he was making considerable progress in the study of natural history, would find himself egregiously mistaken; and, if he is inclined to enter deeply into the plan of this great naturalist, he will often find Birds the most dissimilar in nature thrown together into the same class: the unavoidable consequence of all attempts at compleat systematic arrangements of nature.

BIRD OF PARADISE. This most beautiful bird belongs to the family of the pye kind; of which naturalists have enumerated several species, though we are indebted to the recent discoveries of Sonnerat for some of the most elegant. Indeed, few birds have more puzzled and deceived the learned than the Bird of Paradise. Some have described it as an inhabitant of the air, living only on the dew of heaven, and never resting on the earth; others, though they have acquiesced in the latter part of it's history, have nevertheless allowed that it subsists on flying insects: and some have even asserted that it has no legs; while others not only contend that it has very large and strong ones, but absolutely rank this animal among birds of prey.

The amazing beauty of the plumage of this bird on the one hand, and the deformity of it's legs on the other, seem to have given rise to the most erroneous reports. The natives of the Molucca Isles, of which the Bird of Paradise is an inhabitant, perceiving the strong inclination of Europeans for this beautiful bird, carefully cut off it's legs before they brought it to market; and thus concealing it's greatest deformity, they considered themselves as entitled to rise in their demands. One deceit led to another: the buyer, finding the bird without legs, naturally enquired after them; and the seller thought it his interest to deny that it ever had any. Thus far the Europeans were imposed on by others; but afterwards they imposed on themselves. Seeing so beautiful a bird destitute of legs, they concluded that it could only live in air, where those members were unnecessary: the extraordinary splendor of it's plumage assisted this deception; and, as it possessed celestial beauty, it was honoured with an imaginary celestial residence; and from this circumstance it's name is derived, as well as the numerous fictitious reports which ignorance and design have propagated concerning it, and which blind credulity has believed. Error, however, is short-lived; and time has discovered, that this bird has not only legs, but that they are very large and strong in proportion to it's size. Credulity, when undeceived, runs into the opposite extreme; and accordingly, very soon after, this bird was branded with the character of being extremely rapacious; and, from the amazing rapidity of it's flight, was deemed qualified for extensive rapine.

The Birds of Paradise, which exceed all others in the beauty, variety, and peculiar construction of their plumage, associate in large flocks in the delightful spicy woods and groves of their native islands; and the inhabitants themselves, who are not insensible to their superior charms, give them the name of God's Birds. From the rapidity of their flight,

flight, as well as from their being continually on the wing in pursuit of insects, their usual prey, they are sometimes called the swallows of Ternate. However, as the country where they breed is visited with tempestuous seasons, during which rains and thunders continually disturb the atmosphere, these Birds are seldom seen at such times; and it is supposed that they then migrate to countries where their food is to be found in greater abundance; for, like swallows, they have their stated periods of return.

In the beginning of the month of August, they are seen flying together in great numbers; and, as the inhabitants of the Molucca Isles are inclined to believe, following their king, who is distinguished from his subjects by the beauty of his plumage, and that respect and veneration which they are supposed to render him. In the evening they perch on the highest trees of the forest; and particularly one which bears a red berry, on which they sometimes feed when they find a deficiency of more desirable support. The natives, many of whom make a trade of killing and selling them to Europeans, generally conceal themselves in those trees to which the birds are known to resort; and, having furnished themselves with arrows, exert their utmost endeavours to shoot the king: this being effected, the greatest part of the flock become an easy prey. When they have taken a number of these birds, the usual method is to gut them, and cut off their legs; they then thrust hot irons into their bodies, the heat of which dries up all internal moisture; and, filling the cavities with salt and spices, carry them to the usual resorts of Europeans.

BIRD OF PARADISE, COMMON. This Bird is, in appearance, as large as a pigeon; but its body, in reality, is by no means bigger than that of the common thrush. Its head, throat, and neck, are of a pale gold colour; the base of the bill, the sides of the head, and the throat, are covered with black feathers as soft as velvet, and changeable like those on the neck of a mallard; the hinder part of the head is of a shining green mixed with gold; the body and wings are chiefly covered with beautiful brown, purple, and gold feathers; the superior parts of the tail-feathers are of a pale yellow, those under them being whiter and longer, so that the extremity of the tail appears to be wholly white; and from the upper-part of the rump proceed two slender filaments, longer than the whole body of the bird, and bearded only at the ends.

BIRD OF PARADISE, OF MARCGRAVE. This bird, which is of the size of the swallow, has a small head and eyes, a sharp bill, thick feet, and crooked claws. The feathers about the bill are silky, being a mixture of green and brown above, and black below; the superior part of the neck is of a gold colour, and the inferior is a mixture of green and gold; the breast is of a deep brown; and the rest of the body, wings, and tail, are of a beautiful brownish colour, the long feathers near the sides being of a gold colour near their rise, but in their other parts of a whitish yellow, and the two projecting quills of a gold colour at their rise, but becoming of a darkish brown towards their extremities, and considerably bent.

BIRD OF PARADISE, GREATER. This species is about the size of a blackbird. The wings, when closed, measure seven inches; the long shafts springing from the rump, twenty-seven inches; and the longest of the soft loose feathers, rising from under the wings, twenty-one inches. The bill is about an inch and three-quarters long; and, from its tip,

to the extremities of the common or shorter feathers of the tail, about twelve inches. The bill has a slight convexity towards the point, and is of a dirty yellowish green colour; the fore-part of the head is covered with black feathers of a velvet gloss, which entirely surround the bill; the throat is covered with green feathers of the same velvet fabric, shining with a golden gloss; and fine yellow feathers extend from the upper part of the head to the sides of the neck, and almost encircle the green ones on the throat. The breast is covered with plumage of the common structure, and of a fine dark purplish colour: the rest of the body, the back, the belly, the wings, and the tail, are of a bright reddish chesnut colour; but the inside of the wings, and the under-side of the tail, are much darker than the upper. Two black filaments, like horse-hairs, but stiffer and stronger, spring from the rump; having narrow webs on both sides, for about four inches of their length.

This Bird is chiefly remarkable for the plats of feathers under the wings on each side, which extend themselves a great way beyond the common feathers of the tail. These feathers are of a very fine structure, and exceedingly light; and the webs are so very open, that they may be seen through like gauze. The longer feathers are of a light reddish brown; and the shorter, which fall over them, are of a very bright yellow, with a reddish tinge at their tips. They fall either above or under the tail, but are so very loose, that they disclose the tail either way. The legs and feet, which are shaped like those of the pyc kind, are armed with claws of a moderate strength, and of a dark brown colour.

BIRD OF PARADISE, KING, OF EDWARDS. This very elegant bird is about the size of the chaffinch. The bill is pretty straight, somewhat slender, and of a yellow colour towards the angles of the mouth. The upper mandible of the bill is covered half way with velvet feathers of an orange colour; the head is covered with velvet or plush-like feathers, which seem to be characteristic of the genus; the neck, the back, the upper sides of the wings, and the tail, have feathers of the common structure, of a full red colour a little inclining to chesnut, and of a most beautiful gloss; the under part of the neck has a mixture of black, blended with red; the insides of the greater feathers of the wings are of a reddish yellow; the inner covert-feathers of the wings are white; and the under side of the tail is dusky. Under each wing there is a remarkable tuft, composed of seven or eight feathers of a dark blackish brown colour, with very fine glossy green tips; and each feather has a transverse bar or line of a whitish colour which parts the green part of it from the dusky. On the breast there is a crescent of a shining dark green colour, the horns of which point upwards; and this crescent is divided from the neck by a yellowish light line passing transversely above it. The belly, thighs, and coverts under the tail, are white; but towards the knees the colour becomes a little brownish. Five stiff naked stems of feathers, each about six inches long, spring from the upper sides of the middle of the tail, which towards their extremities are beset with webs on one side, and curled round so as to form circular terminations, flat and shining, of a variable colour partaking of red and green. The legs of this bird are of a dark brown; and it has four strong light-coloured toes.

BIRD OF PARADISE, KING, OF CLUSIUS. This bird

bird is the smallest of the genus. The wings are considerably longer than the body; the bill is white; the lower part of the upper mandible is covered with a sort of red silky down, as well as the fore-part of the head, but the middle part about the eyes is full of black specks; the feathers on the neck and breast, which resemble silk, are of a deep black colour; the back, wings, and tail, are of a dusky yellow; beneath the breast is a black stripe as broad as the little finger; and the feathers which cover the belly are white, but black near the wings. The naked quills are slender and black, and rolled up into a kind of balls at the ends; on one side of which balls there are very fine shaggy hairs, their upper parts being of a shining deep green, and their under ones of a dusky yellow.

BIRD OF PARADISE, KING, OF SONNERAT. This bird, as described by that very ingenious voyager, and accurate naturalist, who says that all his predecessors have either given an imperfect idea of it, or copied it from defective models, is about the size of the common European blackbird. Its head, neck, throat, back, tail, and wings, are of a shining red, as bright and vivid as carmine, and of a soft and silky appearance. The middle of the belly is white, terminated by a transverse bar of green below the neck; the feathers which form this bar being of a brightness and polish resembling metal. On each side of the belly, beneath the wings, there are long feathers, brown at their bases, and also a considerable way upwards, but terminating in green points of the same lustre as the transverse bar on the breast. From the middle of the tail proceed two long filaments or shafts of blackish feathers without beards, which extend far below the tail and wings; and, near their extremities, these shafts become bearded on one side, and convolving themselves, form a pretty large circle, with an opening in the centre; which circle is of an emerald colour, bright and varying. Above the eyes there is a black spot; the irides are yellow; and the bill and feet are of this last colour.

BIRD OF PARADISE, GOLDEN. This species is somewhat larger than a swallow. The bill, which is pretty long in proportion to its size, is of a brownish colour towards the head, and black at the point, with a little incurvation downwards. Between the eyes and the bill there are some black velvet feathers, narrow at the base of the upper mandible, and extending themselves from the lower mandible about an inch down the throat. The head, the upper side of the neck, and the back, are covered with feathers of a very fine reddish orange or gold colour, long and loose on the neck, and falling a little over the breast. The breast, the belly, and the larger feathers of the wings, are of a very beautiful yellow, or pale orange colour; and the covert-feathers of the wings are black, with a slight mixture of yellow. The golden or yellow colour of this bird is so extremely vivid, as to baffle all imitation. The tail-feathers are of a deep black above, and of a rusty black beneath, the under-parts of their shafts appearing yellowish; and all of them have very narrow borders of yellow just at their tips. The legs are of an olive colour, and the claws are pretty strong.

BIRD OF PARADISE, PYED. This bird has a dusky or black bill, compressed like that of a duck, and at the base of the upper mandible there are black stiff hairs. The head and neck are entirely black, adorned with a crest of loose slender feathers bending backwards. The body, except the wings, is wholly white; the prime quills, which are

black, have a little whiteness at their roots, and the bastard-wing which covers their bottoms is of the same colour. The quills next the back are black in the middle, and white on the edges; the row of feathers immediately above them is the same; and the lesser covert-feathers of the wings are white, with a very fine dash of black down each feather. The tail is as long as that of a magpie, the two middle feathers exceeding the rest by ten inches: the tail-feathers are white, the shorter ones being tipped and bordered with a fringe of black; and the shafts of these feathers are black, except so much of the long ones as extends beyond the shorter. The legs, feet, and claws, are of a lead colour; and the feet resemble those of the king's-fisher, the middle and exterior toes of each foot being joined together almost to the claws, and the middle and inner ones to the first joint.

BIRD OF PARADISE, VIOLET-THROATED, OR SUPERB. This species, which is somewhat larger than a blackbird, has a black tuft proceeding from the base of the bill, composed of fine short feathers standing erect. The head, the superior part of the neck, and the back, are covered with green plumage of a golden tinge; which, both to the eye and touch, has all the gloss and softness of velvet. The wings are of a deep black, but without any gloss; while the tail, on the contrary, though entirely black, appears like velvet, and is slightly shaded with blue. The throat is of a varying violet, the feathers which cover it having a silky appearance; and the belly is of a vivid green, both sides, beneath the wings, having tufts of black velvet plumes of the same length as the wings. The bill is black, and the legs are brown. This very elegant species was first discovered by Sonnerat, in his voyage to New Guinea; of which country it appears to be a native.

BIRD OF PARADISE, GOLDEN-THROATED. This bird is nearly of the size of the common dove. From the superior part of the bill springs a tuft, which the animal seems capable of elevating, and which is composed of the most beautiful feathers, pretty strong, and furnished with slight webs. The base of the tuft towards the bill is wholly black; but the rest of it is black and white intermixed. The upper-part of the head, the cheeks, and the beginning of the throat, are of a fine black shaded with violet. Behind the head there is a gold-coloured band, composed of the same kind of feathers with those which cover the throat. These feathers, which are long, narrow, and thick set, are black at their roots, of a reddish cast upwards, and they terminate in golden tips: yet they are arranged in such a manner, that nothing but the gold-colour is externally perceptible. This colour, however, varies according to the lights in which it is viewed: sometimes it appears like different shades of gold; at others with an admixture of green, red, or violet; and not unfrequently with all these colours at once. The back is a deep black with a slight tinge of violet; and the tail and wings, which are black, have a velvet gloss. From the under-part of the wings proceed long black feathers pointing upwards, which embrace the wings when closed; the beards of these feathers are not united together, but separated like those of the ostrich.

This bird is peculiarly distinguished from all others of the genus by three long feathers springing from both sides of the head, behind and a little below the eyes; these extend to a fourth part the length of the tail, and terminate in black webs

webs of an oval figure; their shafts are likewise black, and appear, when minutely inspected, to be slightly bearded on one side; at their insertions, they are very close to each other, but they soon diverge in straight lines pretty distant at their extremities. Sonnerat informs us that, having never seen this bird alive, he is at a loss to pronounce whether, in the act of flying, it carries these extraordinary feathers along its body, or in a transverse direction; but as they are situated near the auditory passage, he seems inclined to believe that they answer the same purpose as the ear-drums in quadrupeds. The feet and bill of this species are a clear black; and the irides are yellow.

BIRD OF PARADISE, MAGNIFICENT. This bird is about a third part larger than a common pigeon. The top of the head is of a shining red colour; the throat is of a blackish brown; the upper part of the neck is adorned with long yellow feathers, which have the splendor and polish of gold; the back appears as if gilt; the under part of the neck and belly are of a blueish-green, with a silky gloss; the short coverts of the wings are of a blackish brown, mixed with yellow; the large feathers of the wings are of a yellow or pine tinge, and those on the edges of the wings have blackish brown extremities; the vent and tail are brownish; and the feet and bill are yellow. From the middle of the tail spring two filaments, twice the length of the bird, furnished on their exterior sides with small, fine, and almost imperceptible webs, of a greenish colour and most beautiful polish.

BIRD OF PARADISE, GREEN. The characters of this bird are the same with the rest of the genus, except that the appendages, or long crisped feathers, spring from under the wings. It is somewhat longer and thicker than the common dove, and is entirely of a beautiful green colour, uncommonly brilliant and glossy. The feathers on the head, neck, and body, are short, and arranged like scales one over the other; the feet and bill are blackish; and the irides are red. This creature appears of different shades, according to the light in which it is viewed; sometimes green, and at others blue.

BISCIA. A name sometimes given to the acus, or tobacco-pipe fish; or, as it is frequently called, the needle or trumpet-fish.

BISHOP. The name of a very musical bird of Louisiana; the song of which, some naturalists tell us, continues for the space of a *miserere*, or forty minutes, during all which time it does not appear to breathe: it is then silent twice as long before it renews its strain; so that the alternative of song and rest, according to these writers, continues two hours.

BISON. This animal, which is called *suber* by the Lithuanians, and *wisent* by the Germans, is unquestionably a variety of the cow-kind, distinguished from the rest by a lump between its shoulders. Some of these creatures are very large, and others as diminutively small. In general, the fore-parts of this quadruped somewhat resemble those of the lion, having a long shaggy mane, and a beard under the chin; the head is small; the eyes are red and fiery; the looks are furious and commanding; the forehead is extensive; and the horns are placed very far asunder. A bunch, almost as high as that of a camel, grows on the middle of the back, which is esteemed a peculiar delicacy by the inhabitants of those countries where the animal is found in a wild state. There is no pursuing the Bison with safety, except in forests where there are

trees large enough to conceal the hunters from its view. It is generally taken by means of a pit-fall: in order to which, the inhabitants dig a hole in the ground, and cover it with grass and boughs of trees; after which, provoking the animal to pursue them, they get on the opposite side of the pit-fall; while the enraged creature, running with great violence towards them, falls into the trap prepared for it, and is quickly overpowered and slain.

Bisons are found in all the southern parts of the world; throughout the vast continent of India, and from Mount Atlas to the Cape of Good Hope in Africa. They have soft smooth hair; are very fleet; and in some measure supply the want of horses. In a domestic state, they are remarkably expert and docile, many of them spontaneously bending their knees, in order to take up or deposit their burdens. They are treated by the natives of those countries with a degree of tenderness proportioned to their utility; and the respect for them in India has even degenerated into blind veneration. These animals are also highly esteemed by the Hottentots: they are the companions of their pleasures and fatigues; and are considered by them as their protectors and servants, as they assist them in attending their flocks, and guard them against every invader. While the sheep are grazing, the faithful bakely (as the Bison is here called) stands or grazes before them: still, however, attentive to his master's looks, he flies round the fields, obliges the flocks to keep within proper limits, and shews no mercy either to robbers or strangers.

But the Bisons are not only taught to combat the spoilers of their masters flocks, but even the enemies of their nation; and, accordingly, every Hottentot army is furnished with a proper herd of them, which is let loose against the enemy on convenient occasions. These creatures, when liberated, overturn all before them; striking down their opponents with their horns, and trampling on them with their feet: thus they frequently procure their owners an easy victory before they themselves have had an opportunity of striking a blow. Animals so serviceable cannot be supposed to go unrewarded: the Bisons and their masters occupy the same cottage; and by degrees the creatures conceive an affection for them; while, in proportion as the man approaches to the brute, the brute seems to acquire almost human sagacity.

The Bisons, or hunched cows, differ greatly from each other in the several parts of the world. The wild ones arrive at greater magnitudes than the tame: some have horns, and others are without any; in some they are depressed, while in others they are raised in such a manner as to be adapted either for weapons of defence or annoyance. All of them, however, when tamed, are equally docile and gentle. Those of Malabar, Abyssinia, and Madagascar, are extremely large; but those of Arabia Petraea, and most parts of Africa, are small.

The American Bison differs from that of the ancient continent in several particulars: it is larger than the ox; has low, black, short horns, with a large beard under its chin; and the hair springing from between its horns falls over its eyes, and gives it a frightful appearance. It has a bunch on its back, which begins at the haunches, and gradually increases till it arrives at the shoulders: the first rib before is half a yard higher than those on the back, and is three inches broad. The whole bunch is covered with long reddish hair; and the rest of the body with a sort of black wool which

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is much valued. The breast is large; the buttocks are narrow; the neck and tail are very short; and the head is disproportionably big.

These animals have so quick a sense of smelling, that it is very difficult for either men or dogs to get near them, except on the leeward side; and they are so extremely timid, that a whole herd of them will fly from a single dog: when wounded, however, they become very furious, and turn on the hunters with determined resolution. The flesh of the females is excellent; and the skins of both sexes are peculiarly valuable.

In the western parts of New France, on this side the Mississippi, the hunting of these beasts forms a favourite diversion: the hunters, after ranging themselves in four lines, forming a very large square, begin to set fire to the grass, which at the hunting season is usually very dry and long. As the fire runs along the lines, they advance closer together; and the Bisons, who are extremely afraid of that element, speedily fly from it, and get into a close body: on which the natives attack them very briskly, and seldom suffer any to escape.

In Carolina numbers of these creatures are brought up tame: notwithstanding which, some of them still retain their wild disposition; for they cannot long be confined within any fences, but frequently escape, and ravage the fields; and, wherever they penetrate, draw the whole tame herd after them.

Linnæus calls the Bison a beeve with horns turned upwards, a hunch-back, and a very long mane and beard. The tongue of this animal is said to be as rough as a file; with which if it should happen to touch a man's cloaths, it seldom fails to get him in it's power, and to tear him to pieces. But the Bison seems to have a natural aversion to red; and accordingly, if it meets with a piece of cloth of that colour, it never leaves it till it's hue is entirely defaced.

BITTACUS. A name given by Ctesias, and some others of the Greek writers, to the parrot. It seems to be a corruption of psittacus, for which it is indiscriminately used.

BITTERN. A bird of the heron kind, called by some naturalists the *ardea stellaris*; and, by others, *taurus botaurus*, *butorius*, and *ocnus*: in English, the butter-bump and mire-drum.

This bird is distinguished from all others by it's dismal hollow noise; of which it is impossible to convey an adequate idea in words to those who have never had an opportunity of hearing it: it is somewhat like the interrupted bellowing of a bull, but more hollow and loud; and is sometimes heard, at the distance of a mile, as if proceeding from some formidable being resident at the bottom of deep waters. The bird, however, which utters this terrific sound, is not so large as the heron; the bill is also weaker, and only four inches long; the upper mandible is a little arched, the edges of the lower being jagged; the irides next to the pupil are yellow, and above the yellow they incline to hazel; the eyes are situated extremely low towards the bill; and the ears are large and open. The crown of the head is black, the feathers on the hind-part forming a kind of short pendent crest; the plumage is of a very pale dull yellow, spotted and barred with black; the greater coverts of the wings, the quill-feathers, and the bastard wings, are of a bright ferruginous colour, regularly marked with black bars; the lower belly is of a whitish yellow; and the tail is very short, consisting only of ten feathers, of the

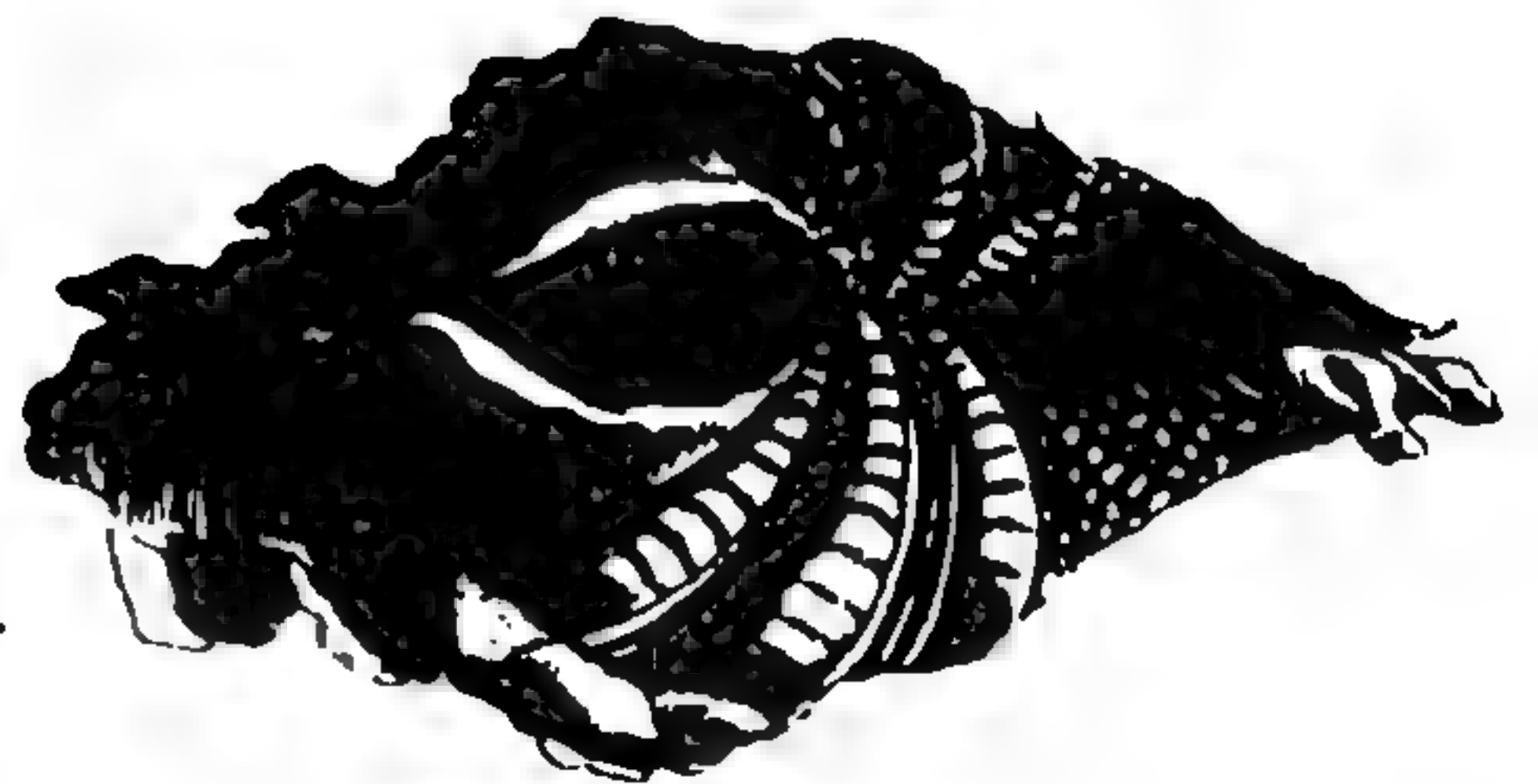
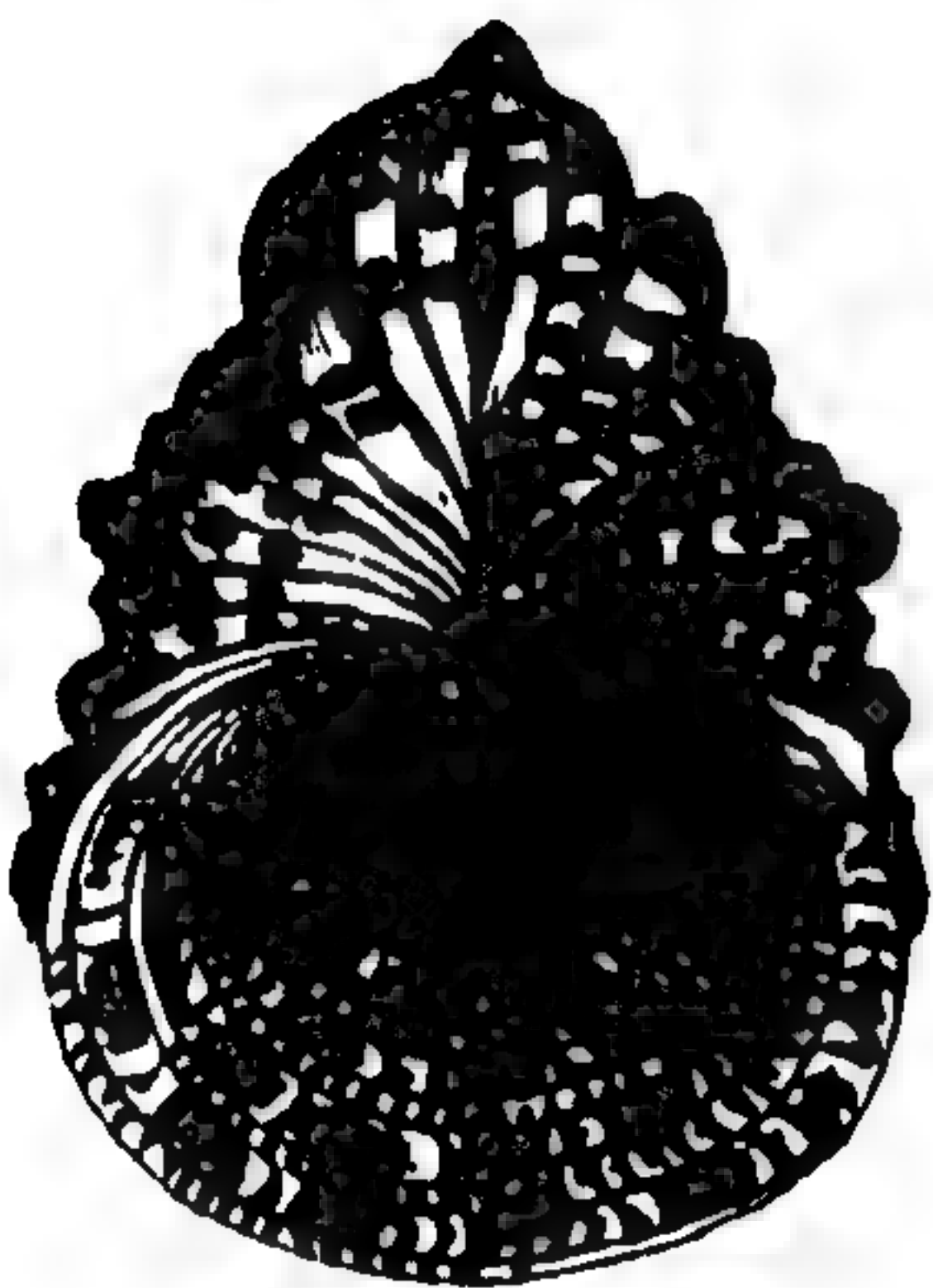
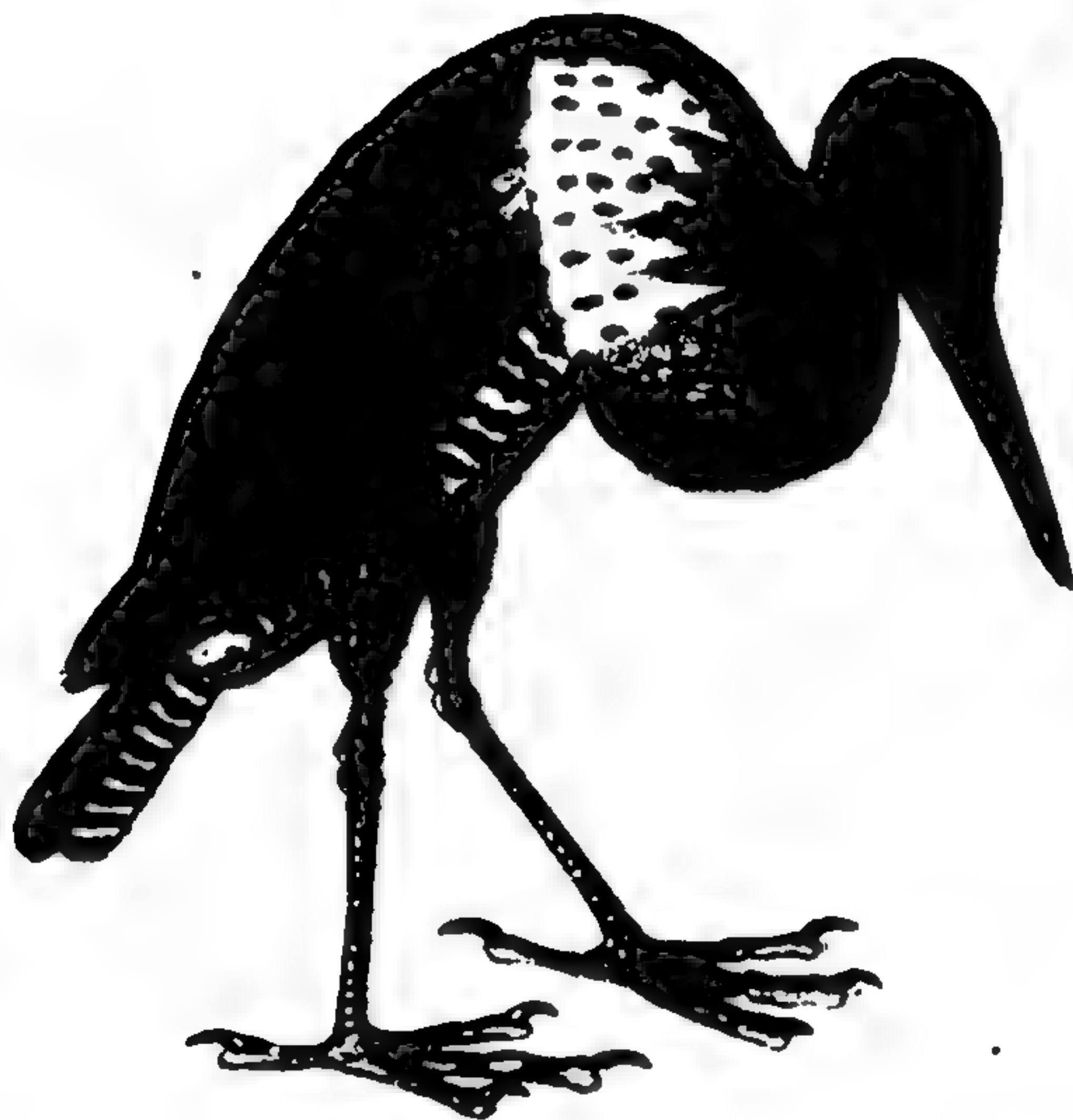
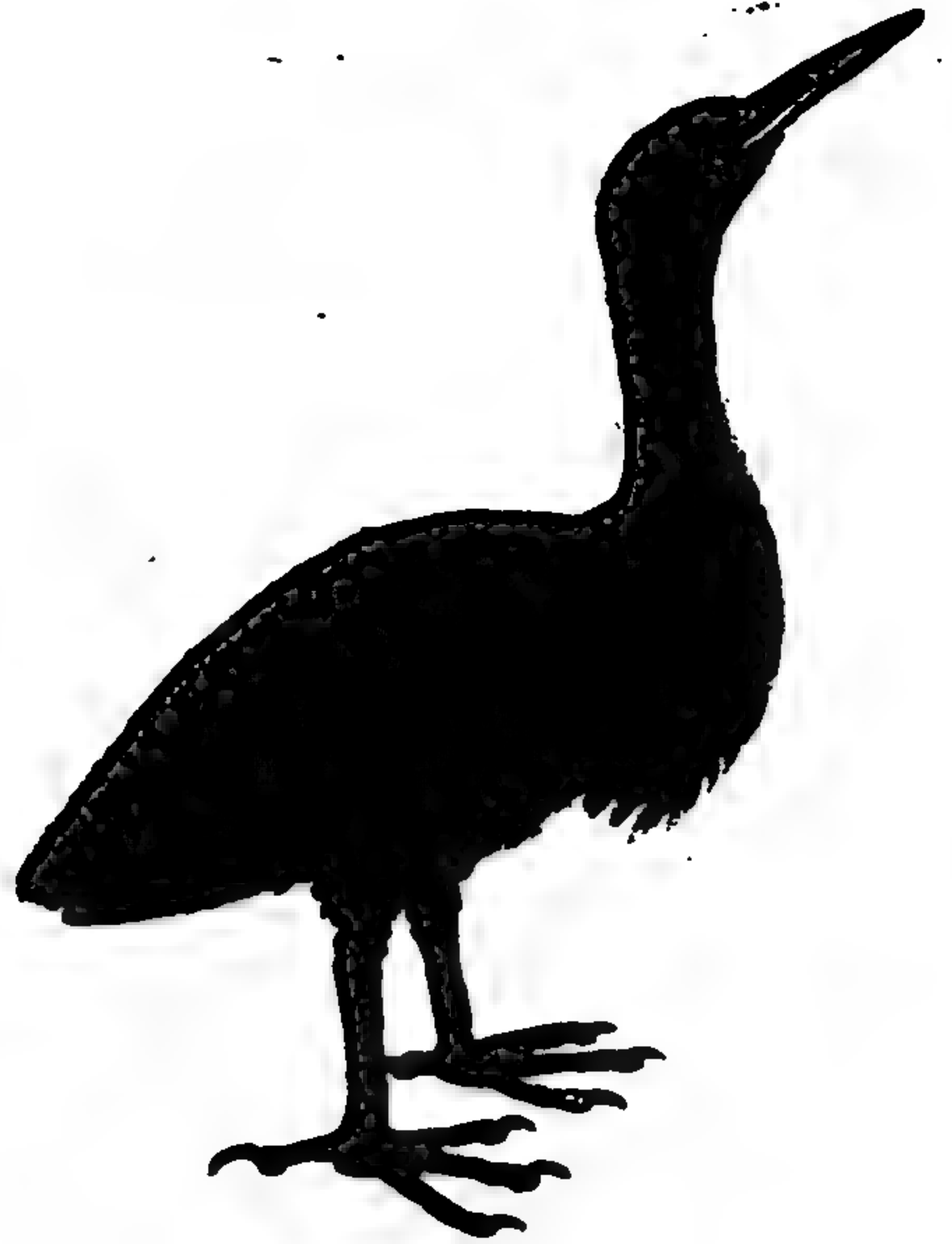
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same colour as the wings. The feathers on the breast are very long, and hang loose; the legs are of a pale green; the claws are long and slender, the inside of the middle claw being finely serrated, to enable the bird to hold it's prey; and the hind claw, which is remarkably long, and is a supposed preservative for the teeth, is sometimes set in silver, and used as a tooth-pick.

The Bittern is a very solitary bird: it's bellowings are chiefly heard from the beginning of spring to the end of autumn; and however dreadful they may seem to us, they are probably either the calls of courtship, or the expressions of connubial felicity. From the loudness and solemnity of it's note, many have been induced to suppose that the creature makes use of external instruments to produce it, and that so small a body is incapable of such sonorous exertions. The vulgar are of opinion, that it thrusts it's bill into a reed, which serves as a pipe for swelling the note above it's natural pitch; while others imagine that the Bittern immerses it's head in water, and then produces it's boomings by blowing with all it's might. But, after all, it is evident that the wind-pipe of this creature is fitted to produce the sounds for which it is remarkable; and that it is often heard in situations where there are neither reeds nor water to assist it. It conceals itself in the sedges by day, and begins it's call in the evening, booming six or eight times; and, after a silence of some minutes, renewing it's strains. When it's retreats among the sedges are invaded, as well as when it dreads the approach of an enemy, it is perfectly silent; and, while in a state of domestic captivity, it remains a mute, forlorn bird, equally incapable of attachment and instruction. But though it's bellowings are always performed in solitude, it has another kind of scream, which it generally uses when in the act of seizing it's prey, and to which it is sometimes impelled by fear.

This bird, though of the heron kind, is neither so destructive nor so voracious. It is a retired, timid animal, subsisting principally on frogs, insects, and vegetables; and though it greatly resembles the heron in it's form, differs essentially from that bird in it's manners and appetites. The heron inhabits the tops of the highest trees; the Bittern forms it's nest either in a sedge margin, or amidst a tuft of rushes. The heron builds it's habitation with sticks; the simpler one of the Bittern is composed of sedges, the leaves of water-plants, and dry rushes. The heron feeds it's young for many days; the Bittern, after three days, leads them abroad in search of their food. In short, the heron is lean and cadaverous, and subsists chiefly on animal food; while the Bittern is plump and fleshy, and feeds on vegetables when more nutritious aliment cannot be found.

With whatever terror the voice of the Bittern inspires the simple, it's flesh is greatly esteemed among the luxurious: for which reason, it is as eagerly sought after by the fowler, as shunned by the peasant; and, as it is a heavy-rising, slow-winged bird, it does not often escape him. Indeed, it seldom rises till almost trod upon, and seems to seek protection rather from concealment than flight. At the latter end of autumn, however, towards evening, it appears to throw off it's wonted indolence; and is then seen rising in a spiral ascent till it gets above human sight; making at the same time a very singular noise, altogether different from it's former boomings. Thus the same animal is often known to assume different habits: and while the Latins have

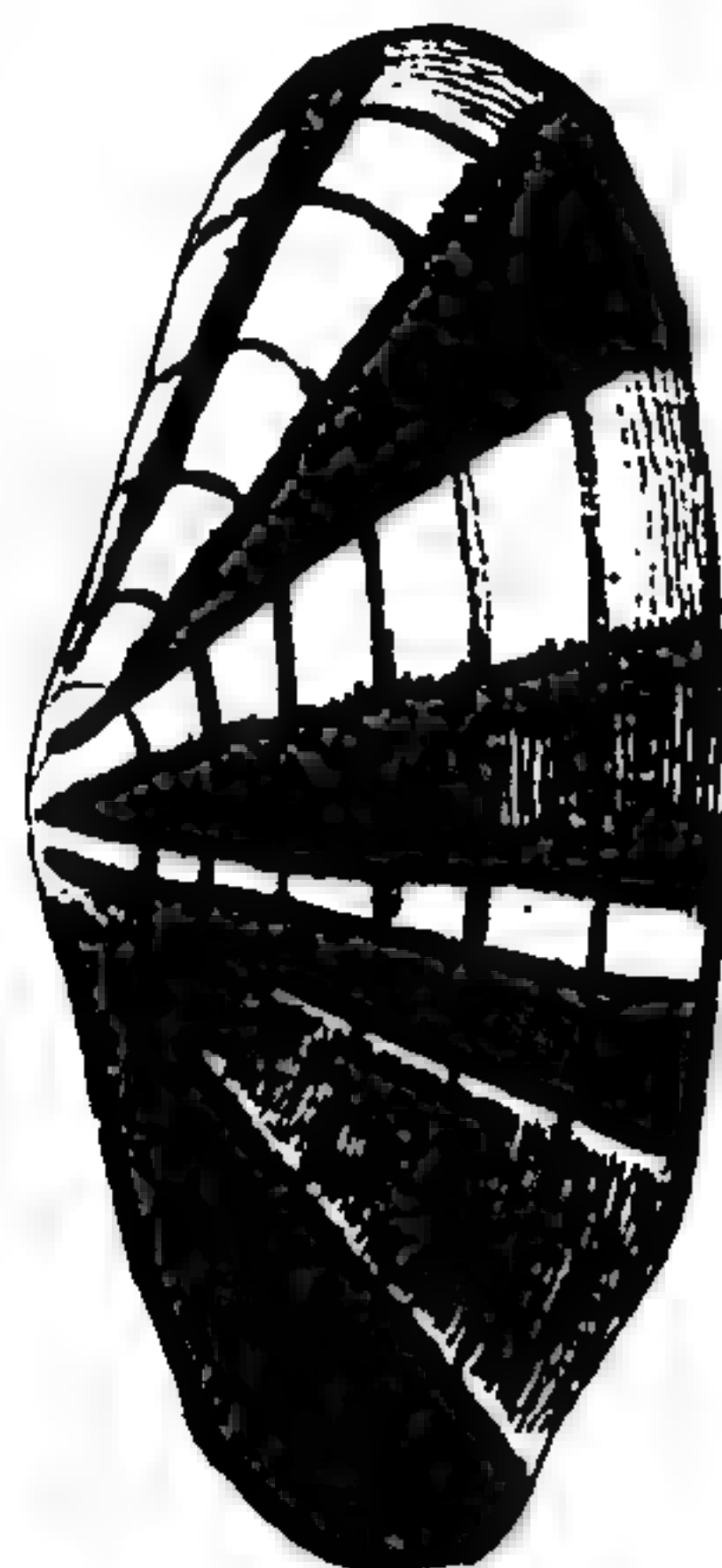


1. BRAZILIAN BITTERN. 2. LITTLE BROWN BITTERN. 3. NORTH - AMERICAN BITTERN.
4. BIVALVES

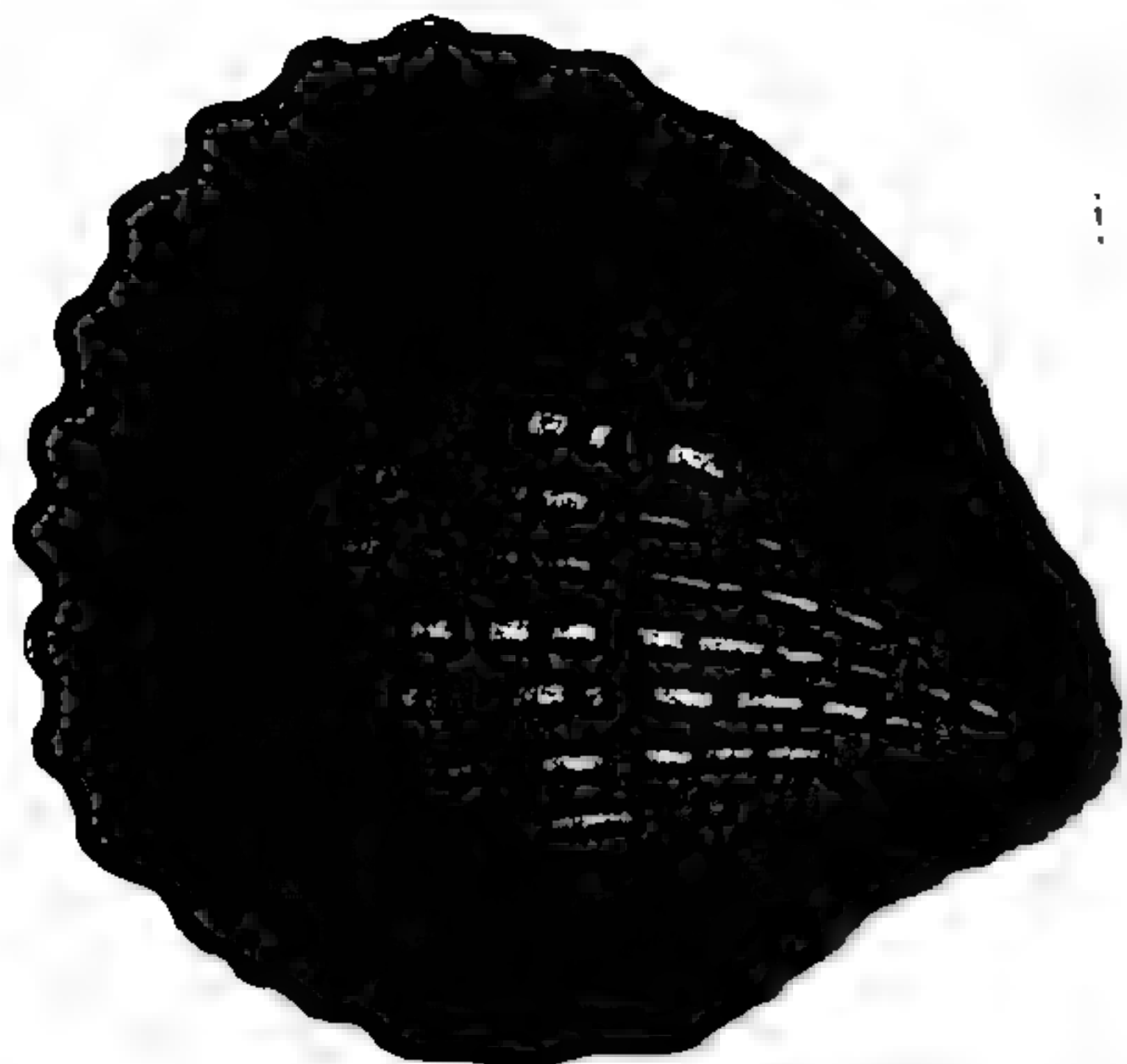
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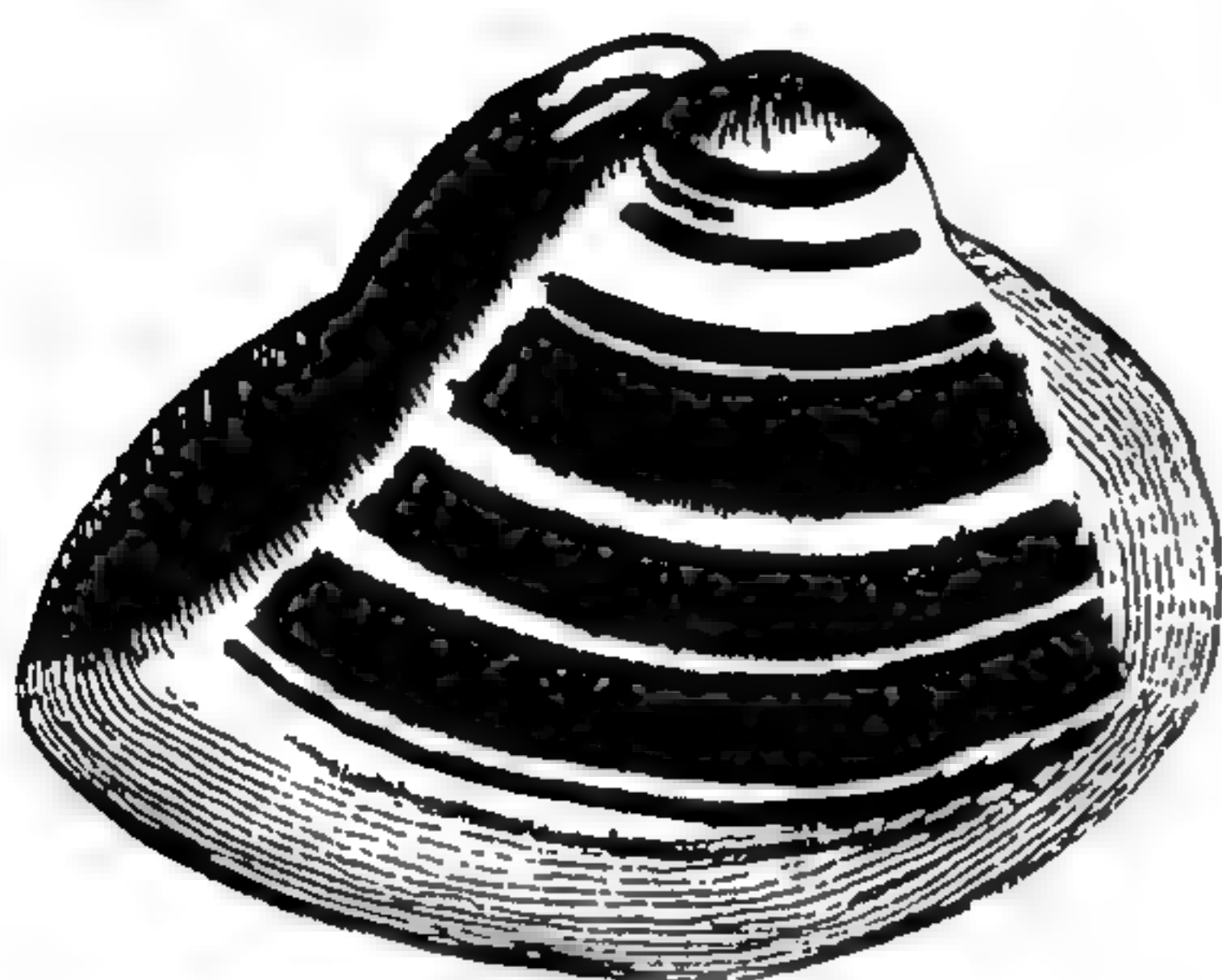
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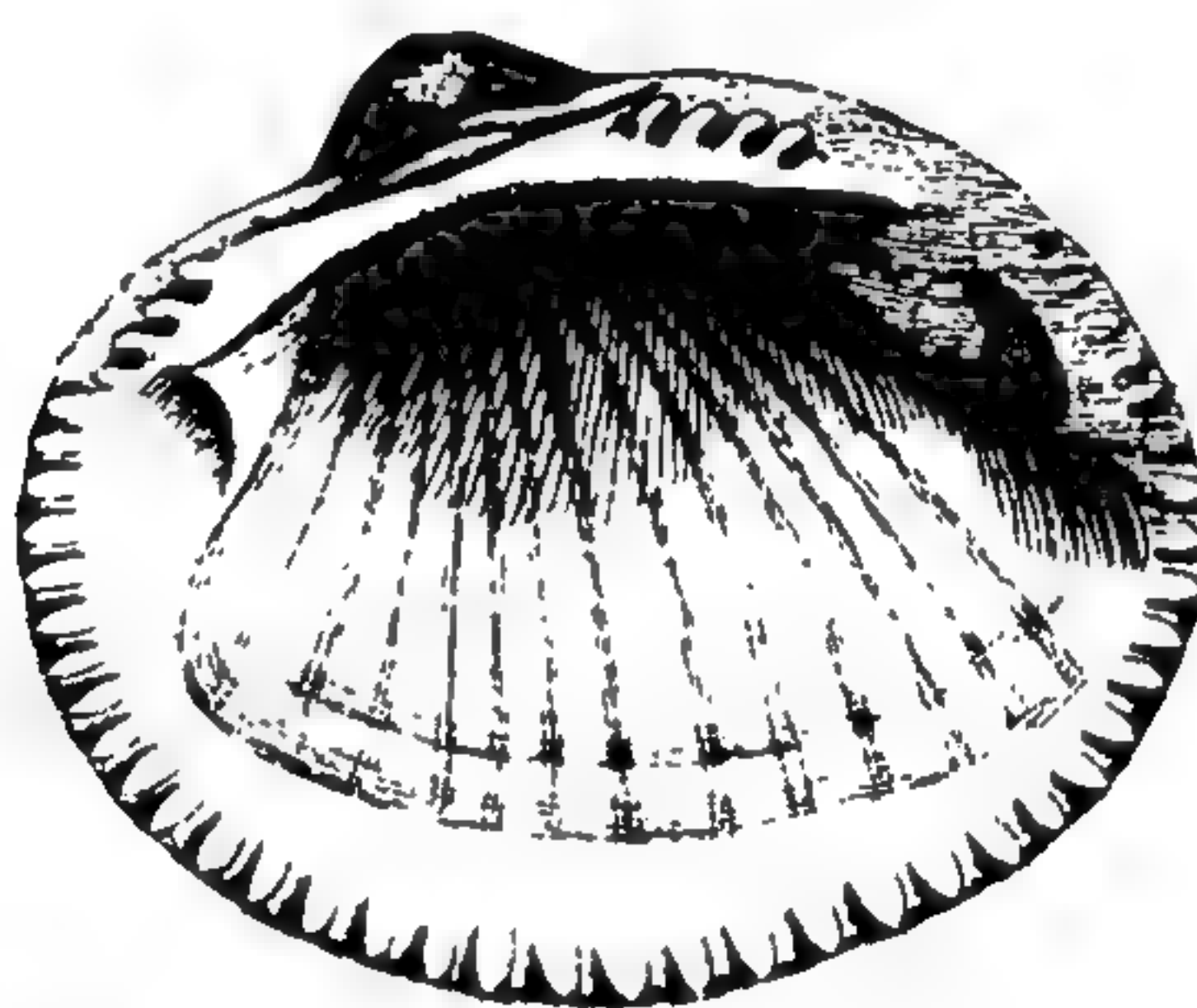
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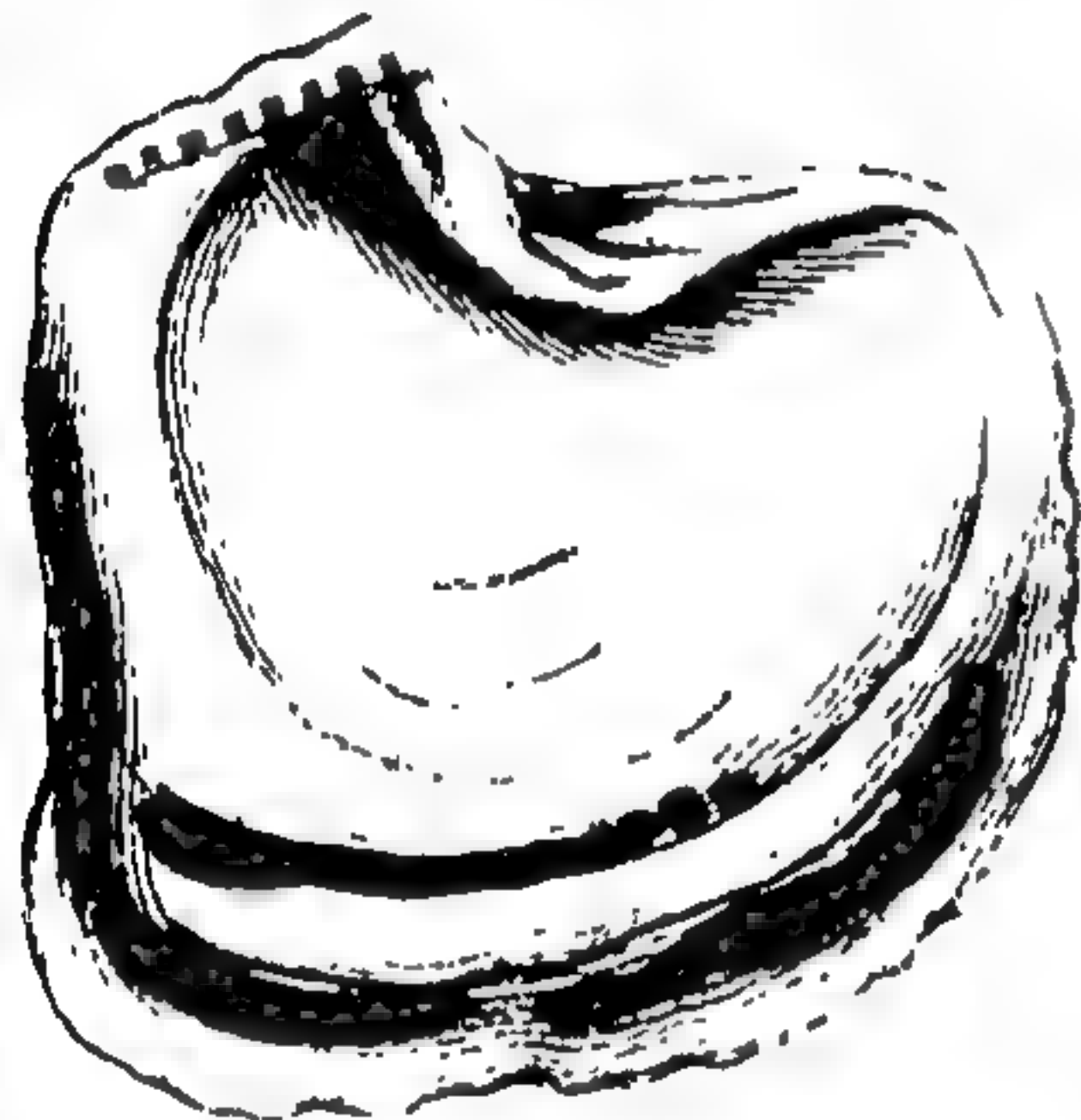
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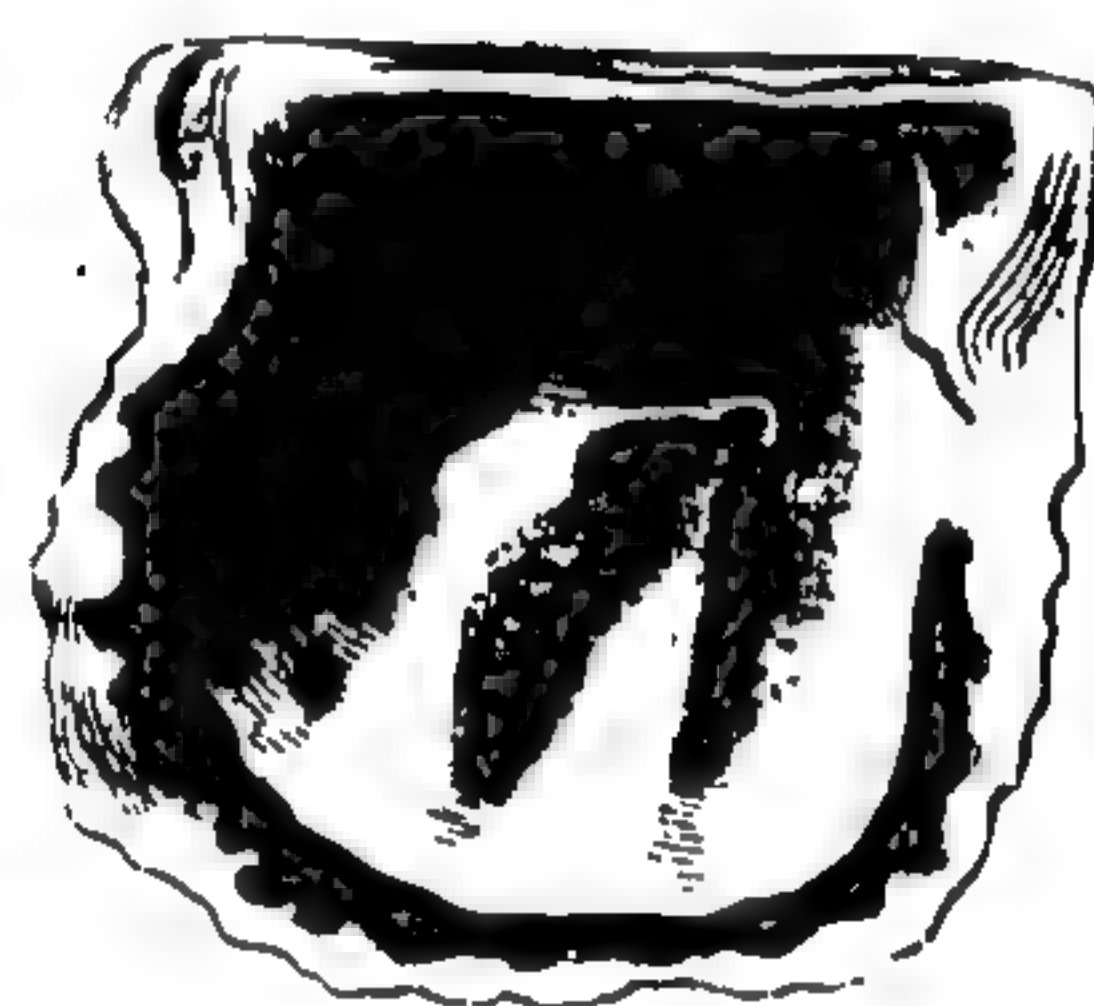
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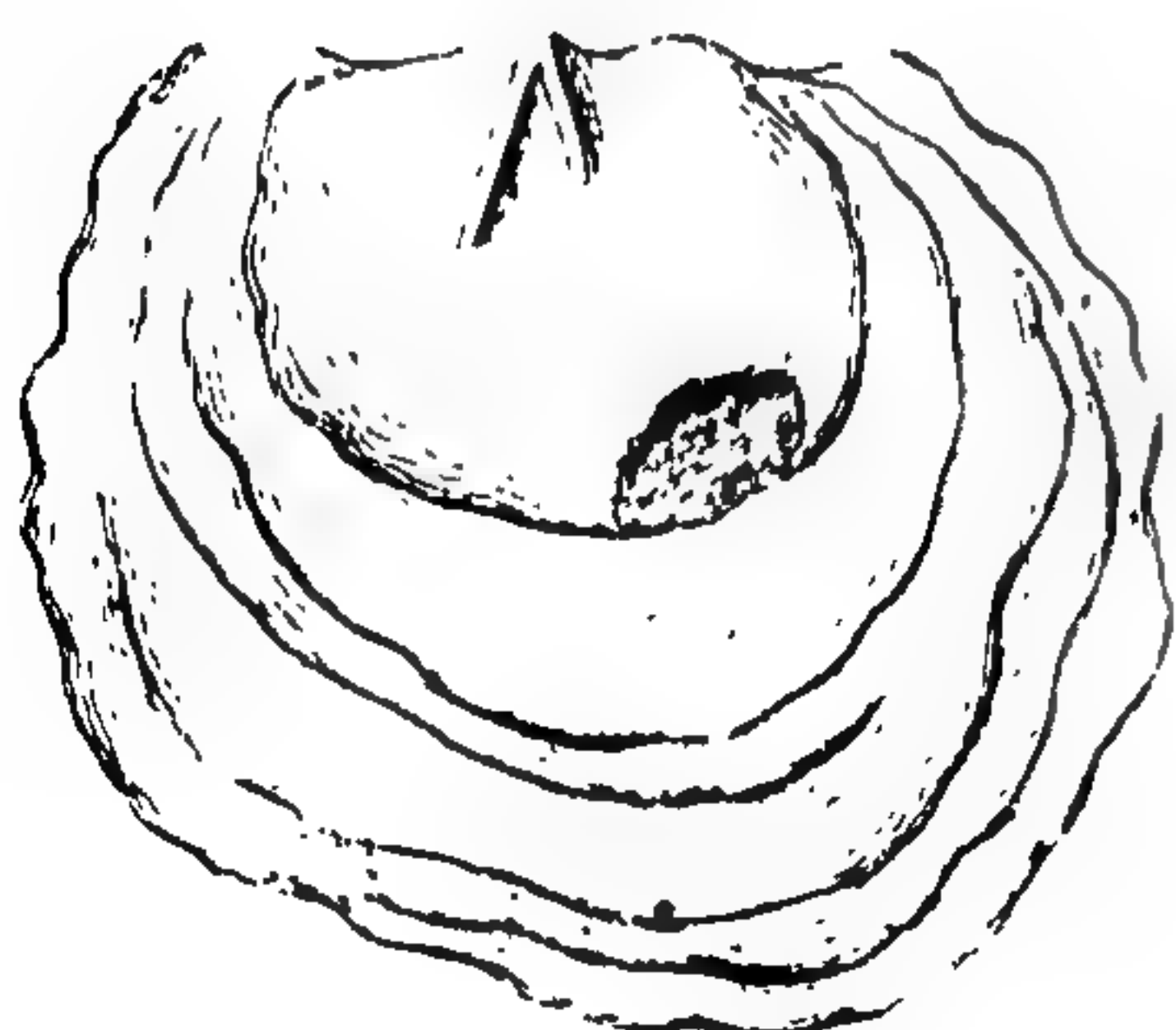
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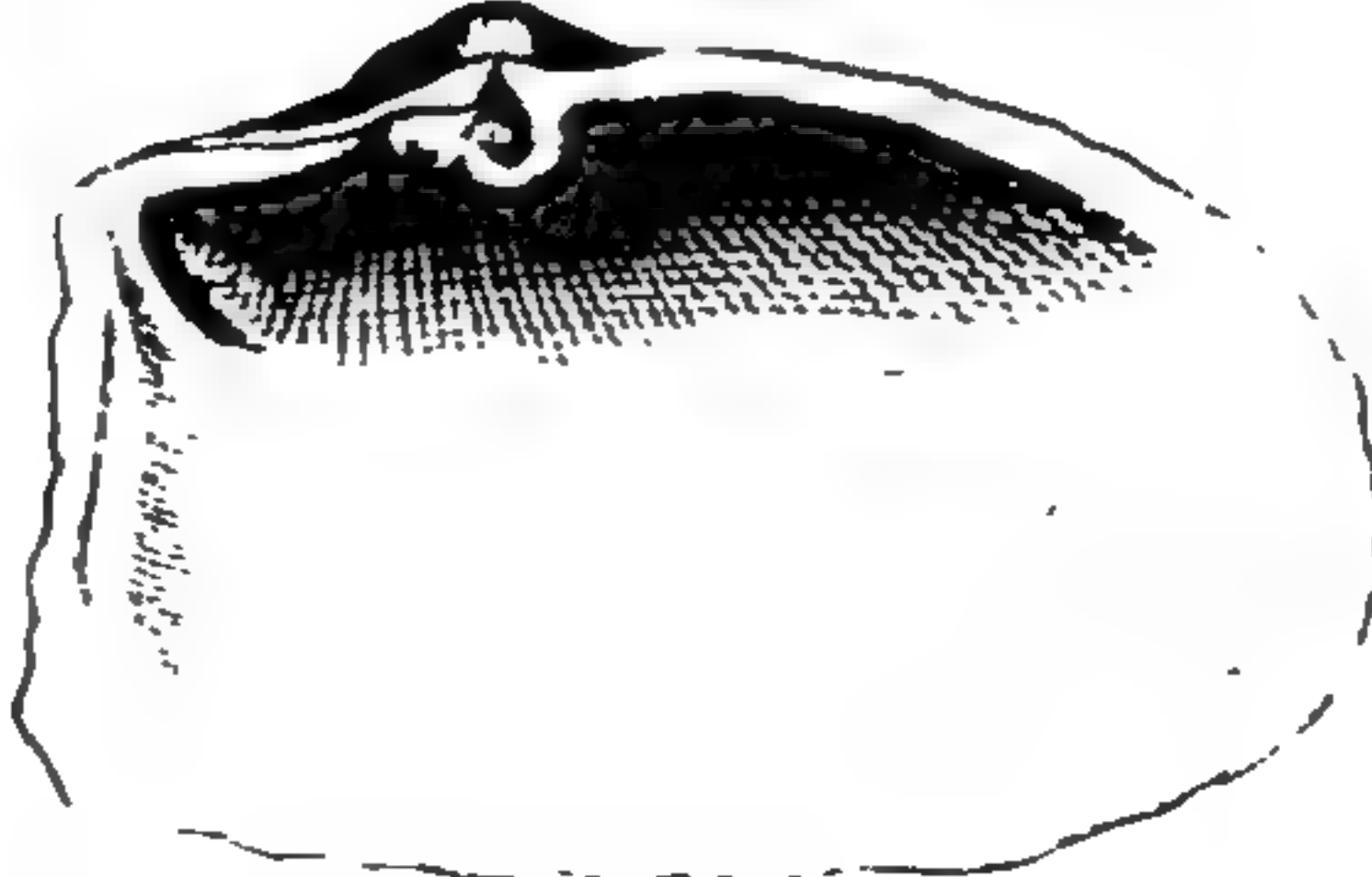
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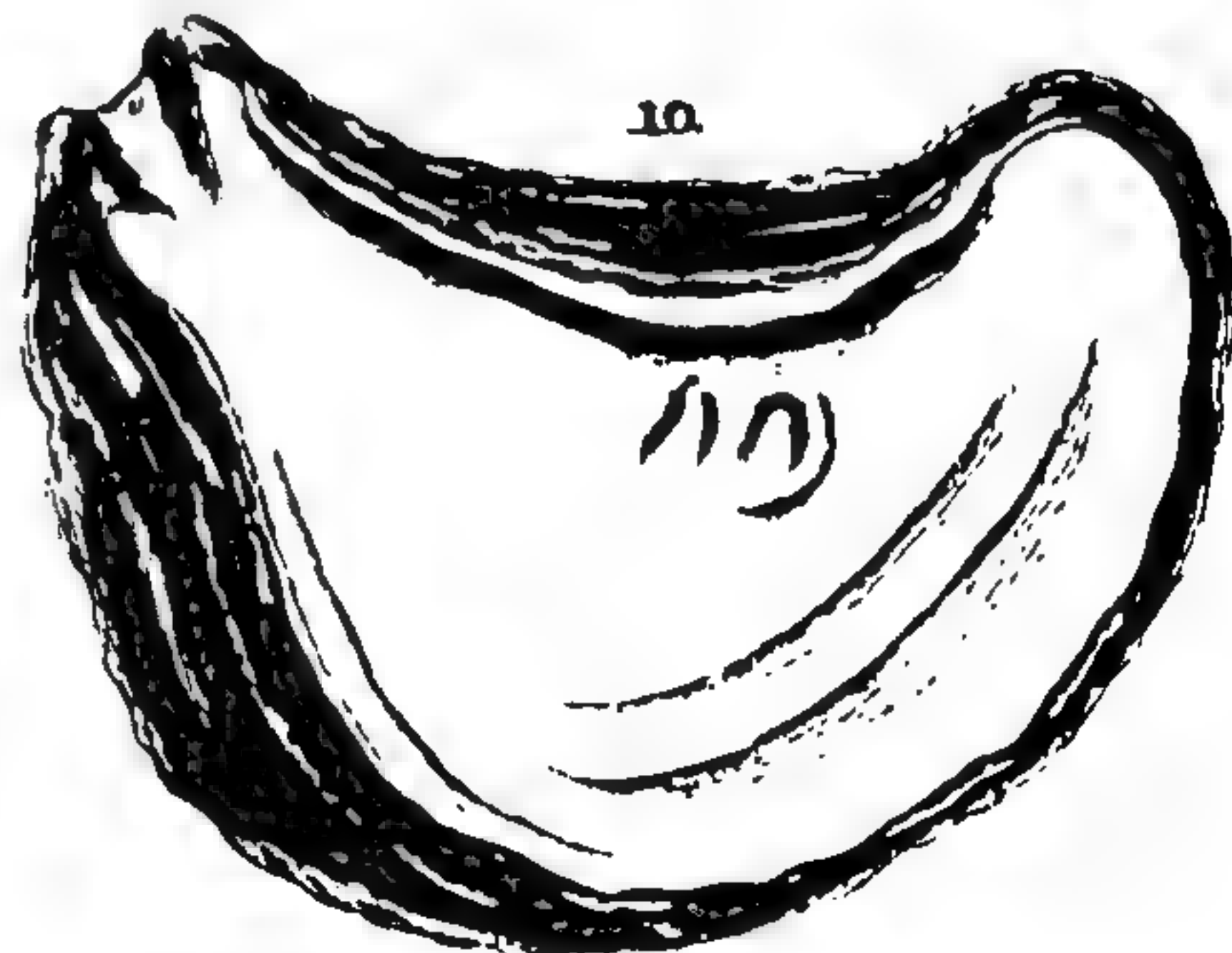


PLATE II. BIVALVES.

1. SOLEN, OR RAZOR SHELL.
2. TELLIN.
3. HEART COCKLE.
4. MULTARTICULATE COCKLE.

5. TRUNCATED COCKLE.
6. PEARL OYSTER.
7. SPONDYLE.
8. HINGE OYSTER.

9. CHAMA, OR OYSTER.
10. COMMON OYSTER.
11. PELLUCID OYSTER.

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have given the Bittern the name of the star-reaching bird, or the stellaris; the Greeks, taking it's character from it's more constant habits, have given it the title of the oknos, or the lazy.

BITTERN, SMALL. This species is about fourteen inches long, and twenty broad. The bill is surrounded at the base, and above the eyes, with a yellow naked membrane, extending as far as the nostrils; the bill itself is two inches long, and sharp at the point; the upper mandible is black, and the lower yellow. The neck is five inches long, and considerably curved; the feathers on the top of the head are brown, rising a little in the manner of a tuft; the upper part of the neck is of the same colour, as well as the back, wings, and tail, excepting a few whitish and tawny spots; the chin, the lower part of the neck, the breast, and the belly, are of a light brown, mixed with white and ruddy colours; the tail is about an inch long; and the legs, which are four inches, are of a dark brown before, and yellow behind.

BITTERN, BRAZILIAN. The bill of this species is black towards the end, and yellowish at the base; the head, and upper part of the neck, are ferruginous, streaked with black; the feathers on the lower part of the neck are long and loose like those of the common Bittern, the upper parts of them being rust-coloured, and the lower white spotted with black. The back, the coverts of the wings, and the secondaries, are barred with black and ferruginous; the breast and belly are white in the middle, and barred with black on the sides; the tail is barred with black and white; and the legs are of a yellowish brown. This Bird is a native of South America; and is esteemed very excellent food, especially when young. The Brazilians lay wait for them among the sedges, where they shoot them in great numbers.

BITTERN, LITTLE BRAZILIAN. This bird is somewhat less than a pigeon; but the neck is seven inches long. At the base of the bill the skin is of a yellowish colour; and the upper part of the head is of a steel colour, interspersed with palish brown feathers. The whole neck, breast, and belly, are covered with white and ash-coloured feathers; but the back is partly black, and partly of a dark steel colour, mixed with some feathers of a cereous hue. The long feathers of the wings are greenish, terminating with white spots; and the other parts above are beautifully variegated with steel, brown, yellow, and ash colours. The legs, as far as the middle, are naked; the feet are of a blossom colour; and the irides are of a bright yellow.

BITTERN, NORTH AMERICAN. This species is somewhat less than the English Bittern; the wings, when closed, being under twelve inches. The bill is straight, lessening gradually to a point; the top of the upper mandible, as well as the point of the bill, is black; the edges of the upper, and a considerable part of the lower mandible, are yellow; and between the nostrils and the eyes there is a naked yellow skin. The top of the head is covered with longish, soft, black feathers; the sides of the head with reddish; the under part with white feathers; and the neck with long slender feathers, partly brown and partly white, spotted with reddish brown. The back, rump, tail, and coverts of the wings, are of a bright reddish brown, variegated with a mixture of transverse black lines. The first prime quills are wholly black; those next them are black, with reddish tips; and the remainder are reddish and black. The belly, thighs,

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and covert-feathers under the tail, are whitish, the belly and thighs being marked with oblong spots of black; the legs are bare above the knees; the toes are pretty strong, the middle claw being serrated, and the hinder one very long; the middle and exterior toes are joined a little way up by a skin or membrane; and both the legs and feet are covered with yellow scales. This bird is frequently found about Hudson's Bay.

BITTERN, LITTLE BROWN. This species is about the size of the lapwing. The wings, when closed, measure six inches; and the bill, which is formed like all others of the ardea kind, is about two inches and a half from the point to the angles of the mouth. Between the bill and the eyes the skin is bare, as in the common Bittern; the top of the head is black; and on each side of the head there is a black line proceeding from the angles of the mouth: the neck is covered with long, loose, reddish brown feathers, lighter before, and darker behind; the back is covered with reddish brown feathers, the middles of which are black; and the belly and thighs with light brown feathers of a loose texture, having long narrow black spots down their middles. The wings are of a reddish brown colour, lighter than the back; the lesser coverts are spotted like the back; but the next coverts above the quills, as well as the quills nearest the back, are brown, with a very slight tinge of black: the greater quills, and the tail-feathers, are black; the pinion which covers the bottoms of the greater quills is also black; the covert-feathers in the insides of the wings, the lower belly, and the coverts beneath the tail, are white; the insides of the quills, and the under-sides of the tail-feathers, are cinereous; the legs and feet are of a greenish colour; the exterior toe is connected to the middle by a membrane at it's bottom; and the middle claw is pectinated at one of it's edges. This bird is a native of the country near Aleppo.

Dr. Shaw, in his travels to Barbary and the Levant, describes another species of Little Bittern, called by the Moors boo-onk; that is, long neck. It is somewhat less than the lapwing: the neck, the breast, and the belly, are of a light yellow colour; the back, and the upper parts of the wings, are of a jetty black; the tail is short; the feathers of the neck are long, and streaked with white or light yellow; the bill, which is green, measures about three inches; the legs, which are of the same colour, are short and slender; and, in walking, or searching for it's food, the bird is capable of throwing out it's neck seven or eight inches. It is, however, very probable that this species is only a slight variation of the former, or perhaps the same bird of a different age or sex.

BIVALVE. A class of shells composed of two pieces or parts; which, by means of a proper connection by hinges, play on each other, so as to open, shut, and perform all other functions necessary to the œconomy or modes of life of the animals included in them.

Bivalves may be arranged into three general parts; namely, such shells as have unequal valves, and shut close, as the scallops, oysters, anomia, &c. such as have equal valves, and shut close, as the cockles, tellens, muscles, &c. and, lastly, such as have valves which never shut close, but are always open, or gaping, in some parts, as the bafon conques, or bear's paws, the chamae, pinnae, solens, &c.

Such are the distributions offered by that very accurate

accurate conchologist *Dacotus Linnæus*, however, divides all Bivalves into fourteen families, which he characterizes by the peculiar formation of their hinges in a very scientific manner.

The species of Bivalves are very few when compared to the immense varieties of univalves; nor are they comparable to them in beauty: and farther, there are no land Bivalves, and few of fresh water; whereas the species of land univalves are extremely numerous, and many kinds also occur in the fresh water.

BLACKBIRD. A well-known bird, though of a retired and solitary nature, and the deepest-toned warbler of the woods. From the tip of the bill to the extremity of the tail is near eleven inches; the bill is an inch long, and of a yellowish saffron colour; but in the female the point and upper-part are blackish; and the inside of the mouth is yellow in both sexes, as well as the circumference of the eyelids. There are twenty-eight large feathers in each wing, of which the fourth is the longest: the tail is four inches and a half long; and consists of twelve feathers of equal lengths, except the last on each side, which is somewhat longer than the rest. The feet are black; and the exterior and posterior toes are equal, the first being joined to the middlemost in its lower part.

The plumage of the male Blackbird is of a coal-black colour, but that of the female of a brown or dark russet: however, when the former is young, it is rather brown than black, and has a reddish crest, and a greyish belly; so that it is not easily distinguished from the latter before it is a year old, and then the colour becomes fixed. The liver of this bird is divided into two lobes, of which the right is the biggest: it has also a gall-bladder; but the stomach is not so muscular as in other birds of this kind.

The note of the Blackbird, during the spring and summer seasons, when heard at a distance, is perhaps the most pleasing of all the songsters of the grove; but, when the bird is confined in a cage, its song is rather unpleasant, being loud and deafening. It may be taught, however, to whistle any tune, and even to imitate the human voice. It builds its nest with a considerable degree of art, lining the inside with hair and other soft materials; and the female lays four or five blueish eggs sprinkled with brown spots. In some very cold countries, and particularly on the Alps, Blackbirds are found of a pure white colour; but they are by no means numerous, and are therefore regarded as curiosities when imported into Britain.

If young Blackbirds be taken from their nests at the age of twelve days, they may generally be reared with great facility, care being taken to keep them clean, and to feed them with lean fresh meat cut very small, and mixed with a little moistened bread.

Blackbirds, even in a state of bondage, are usually very healthy; but when they begin to droop, it is proper to give them two or three house-spiders, with a little cochineal in their water. These birds are extremely ambitious of pluming their feathers; and therefore, when grown up, they should always be supplied with plenty of water.

BLACKBIRD, RED-BREASTED. This very curious bird is a native of Surinam, and is supposed to be the same with that described by *Marcgrave* under the appellation of the jacupu. The structure of the bill is very extraordinary, the lower mandible reaching very far into the sides of the head, and

being considerably broader and thicker at the base than the upper mandible. The bill is of a black or dusky colour, except the broad bases of the lower mandible, which are of a blueish ash. The whole body is covered with dusky black feathers, without any gloss, except on the fore-part of the head, the throat, and the beginning of the breast, where they are fringed with a fine crimson colour, externally appearing wholly red, but diminishing gradually on the sides of the breast, and on the belly, till wholly lost in the black. The insides of the wings are black; the tail is of the same colour, of a moderate length, and composed of twelve feathers, the middlemost being somewhat longer than the rest; and the legs and feet are of the common structure, and of a blackish colour.

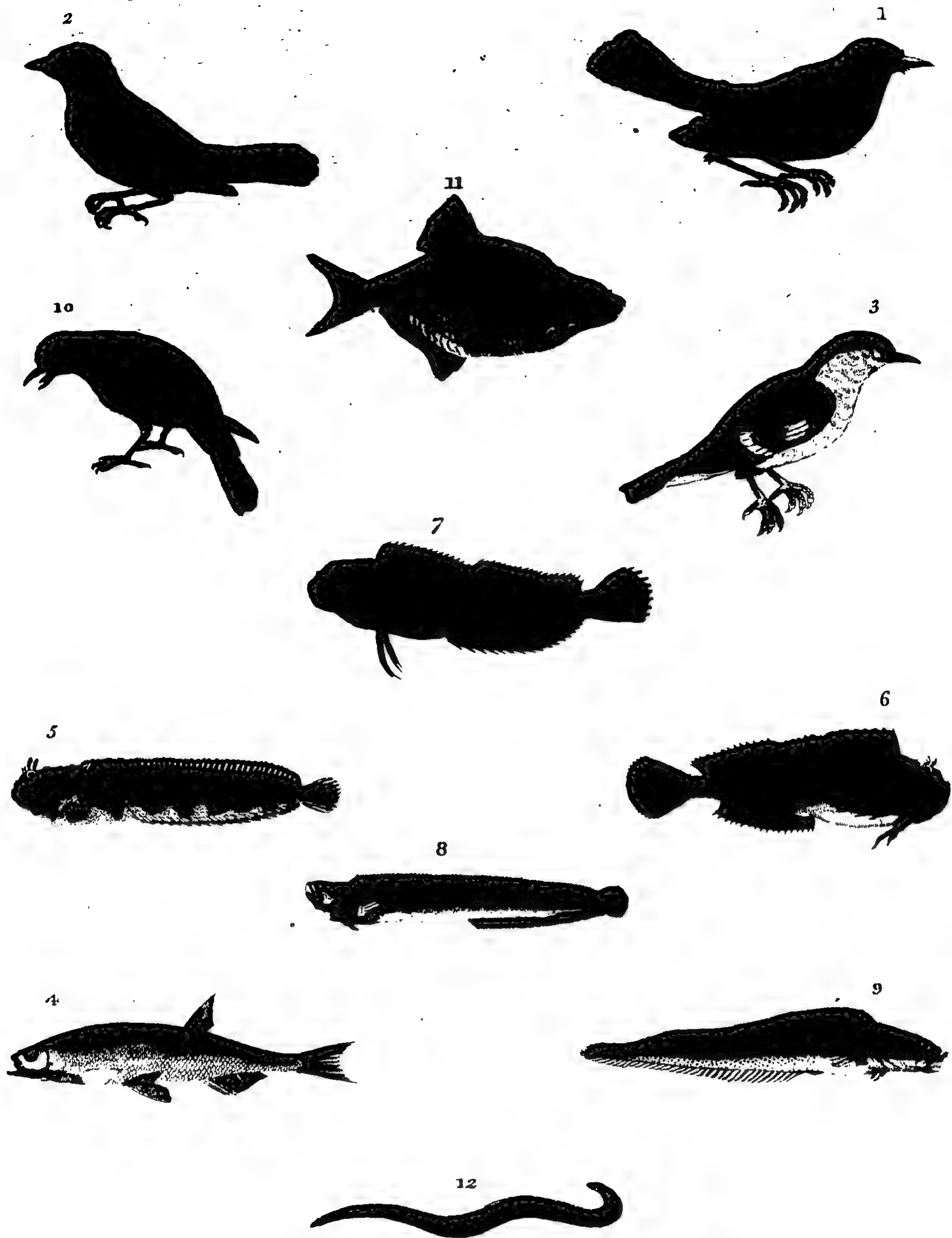
BLACK AND WHITE BIRD, SMALL. This bird, which is a native of Jamaica, is only four inches long from the tip of the bill to the extremity of the tail, and seven broad when the wings are extended. The bill is straight, roundish, black above, white below, and half an inch long; the tail is an inch and a half long; the upper-part of the body is blackish variegated with white lines, the under-part being white, mixed with a small portion of black; the feet are of a greenish brown; and the claws are yellowish.

BLACK AND ORANGE BIRD. This species is likewise a native of Jamaica; and measures about four inches in length, and six in breadth when the wings are expanded. The bill is a quarter of an inch long, and broad at the base; and the tail is an inch and a half long. The head, neck, and back, are black, except that on the latter there is a slight tincture of orange; the wings and tail are brown, with stripes of an orange colour; the breast and covert-feathers of the wings are also orange; the breast is white; and the feet are black. This bird is said to subsist chiefly on ants.

BLACK CAP. A very small bird, scarcely weighing half an ounce. The crown of the head, in the male, is black, from whence it derives its name. The hind-part of the neck is of a light ash-colour; the back and coverts of the wings are of a greyish green; the quill-feathers and tail are dusky, edged with dull green; the breast, and the upper part of the belly, are of a pale ash-colour; the vent-feathers are whitish; and the legs are of a leaden hue. The female is distinguished from the male by the spot on the head, which in the former is of a dull rust-colour.

The Black Cap is a bird of passage, and leaves the British Isles before the commencement of winter: however, during its stay, it gratifies us with its song, which is so sweet, that in Norfolk this bird has obtained the name of the mock-nightingale. Its notes are generally full, sweet, deep, and loud, but of short continuance; and its modulations are desultory: but when the little warbler sits calmly, and is earnestly engaged in singing, it pours forth very sweet, but inward melody; and expresses a great variety of pleasant and gentle harmony, superior perhaps to that of any of our songsters of the grove, the nightingale excepted.

Orchards and gardens are the favourite retreats of the Black Cap: it generally builds its nest in some tree or shrub at a small distance from the ground, and lines it with the fibres of roots thinly covered with black horse-hair. It commonly lays four or five eggs of a pale reddish brown, mottled with a deeper colour, and sprinkled with a few dark spots.



1. COCK BLACKBIRD. 2. RED-BREASTED BLACKBIRD. 3. CEYLONESE BLACK-CAP. 4. BLEAK.
 5. CRESTED BLENNY. 6. GATTORUGINE BLENNY. 7. SMOOTH BLENNY. 8. SPOTTED BLENNY.
 9. VIVIPAROUS BLENNY. 10. RED-BELLIED BLUE-BIRD. 11. BREAM. 12. BLIND-WORM.

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BLACK-CAP, CEYLONEST. The bill of this bird is a little bent, and of a blueish colour; the crown of the head and hind-part of the neck are black; the back is green; the under side of the neck and the entire belly are of a light yellow; the wings are black, with two bars of white; and the tail is of a rust-colour.

The name of Black-Cap is likewise given by the vulgar in many counties of England to the pewit, a bird of the gull-kind; and it is also the common name for the English *parus palustris*, or marsh-tit-mouse.

BLACK-GAME. The common appellation for the *urogallus*, or *tetrao minor*; called also the grouse.

BLACK-FISH. This fish is said to resemble the sheat-fish in it's shape, though not above twenty inches long, and twenty ounces in weight. The head and back are black: and the lateral line runs directly from the head to the tail, through the middle of the side, below which, towards the belly, the colour generally changes to a dark purple; of which colour also is the under part of the head. The head is flat, and near five inches long; the body is round, till within a short space of the tail, where it becomes compressed; the mouth, which is rather small, is destitute of a tongue; the eyes are placed near the corners of the mouth, on the lower edge of the upper jaw; and there are four gills on each side, armed with a double row of sharp points, in a pectinated form. Near the gills there are two fins, consisting of seven rays; and a pretty strong prickly bone is connected to the fore-part. About an inch above the vent, there are two smaller fins; and another of considerable length extends from the vent to the tail. There is likewise another of the same kind that runs from the neck all along the back; but neither of these fins are united to the tail. The Black-Fish is caught in the River Orontes; and it is constantly and plentifully exposed to sale in the markets of Aleppo from November till the beginning of March. The flesh, which is extremely red, has a rank, strong taste.

BLANK. An appellation given by some authors to a species of the cod-fish, called *gelbe, kolmulen*, and *afellus flavescens*.

BLATTA. A genus of insects of the order of hemiptera in the Linnæan system: the characters of which are, that the head is inclined; the antennæ are setaceous; the wings are membranaceous; the thorax is flat, orbiculated, and marginated; the feet are formed for running; and there are two small horns above the tail. There are several species belonging to this genus.

Blatta is likewise the name of a species of beetle, called by Columna *scarabæus testudinatus*, and consisting of several varieties.

The word Blatta, according to some writers, was also used for the kermes insect; and, in the opinion of others, for the purple worm: but both these acceptations are liable to suspicion.

BLATTA, COMMON. See BEETLE, MILL.

BLATTA, YELLOW. This species of scarabæus is somewhat larger than the common fly. The shield which covers the breast is membranaceous, of an oval shape, and marginated; the cases of the wings are membranaceous and transparent, and of a brownish colour, with raised streaks marked with black spots: the legs are prickly, resembling horns; the feelers are long; and there are two articulated horns, or prickles, above the vent. This species is a native of Lapland; for which reason it is called by Linnæus the Lapland Blatta.

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BLATTA, AMERICAN, or, COCK-ROACH. These insects, which are of a reddish brown colour, are extremely destructive and voracious. They herd together in such numbers, that it is almost impossible to keep victuals of any kind from their ravages; and they even eat leather, linen, and paper. They disappear on the approach of winter, but return towards the summer; and chiefly commit their devastations in the night-time. These Blattas lay their eggs in heaps, and wrap them all round in bags or webs, after the manner of some spiders. When the eggs are hatched, the young ones appear quite perfect, and leave their shells almost instantaneously. Being at first no larger than ants, they are capable of penetrating through the smallest apertures into boxes and chests, where they gnaw and destroy every thing within their reach. They have two very long horns or feelers; six hairy legs, with two claws, resembling forks, at their ends; and their heads, which are black, have reddish circles on their upper parts. When arrived at their full growth, they cast their skins, which burst on their backs; and then the Blattas, or Cock-Roaches, are perfectly formed. Their wings are soft and tender, being whitish at first, and afterwards of a reddish colour; but their heads, horns, and the rest of their bodies, retain the same shapes and colours as they possessed before the exuviae were shed.

BLEAK. This very common species of fish, the *alburnus cyprinus* of Linnæus, is found in many of our rivers. Bleaks generally keep together in large shoals; and, at certain seasons, they appear to be in great agonies, tumbling about near the surface of the water, as if incapable of swimming to any considerable distance: but in a short time they recover, and presently disappear. They seem to be troubled with a species of gordius, or hair-worm, of the same kind as those worms with which Aristotle tells us the ballerus and tillo are infested; and which torment them to such a degree, that they frequently rise to the surface of the water, and expire.

Bleaks seldom exceed five or six inches in length. Their bodies are slender, considerably compressed sideways, and not very dissimilar to sprats. Their eyes are large; their irides are of a pale yellow: their under jaws are long; their lateral lines are crooked; their gills, sides, and belly, are silvery; their backs are green; their fins are pellucid; their scales are deciduous; and their tails are much forked. Their fry, or young, during the month of July, appear in astonishing multitudes in the River Thames near Blackwall; and are known in London and it's vicinity by the name of white-bait.

Artificial pearls are made with the scales of the Bleak, after the following manner. Being removed from the fish, artills immerse them in a basin containing a little water, and then rub them against the bottom, as if they were grinding colours. This being done, they pour off the silver-coloured water into a glass, leaving the scales at the bottom of the basin; and then repeat the operation till nothing comes off, always pouring the water into other glasses. They then let it settle for ten or twelve hours, during which time the silvery matter sinks to the bottom; and then pouring off the water by a gentle inclination, that which remains is of the consistence of oil, and of the colour of pearls: this they mix with isinglass, or fish-glue, and with it varnish any sort of substance of the size of beads, particularly wax, alabaster, and glass; all which, after this operation, have the exact appearance of pearls.

pearls. But as these artificial pearls are not proof against moisture, workmen have a method of lining the insides of glass beads with the fluid, blowing in a little of it with a small pipe, and shaking it about till it fixes all over the internal surface. This being done, they throw them into a basket, and shake them together till they become quite dry; after which, in order to render them the more solid, they line them with wax. This is the genuine method of making the true French necklaces; the manufacture of which employs great numbers of that ingenious people.

BLENNY, or BLENNIUS. A genus of fish of the general order of acanthopterygii, according to the distribution of Artedi; and of the jugulares in the Linnæan system. The characters of this genus are, that the membrane of the gills has six bones; that the fore-part of the head is very sloping; that the body is smooth and slippery; that the teeth are slender; and that the ventral fins generally consist of two united rays.

BLENNY, CRESTED. This species is sometimes found on the shores of the British Isles, and is commonly about four or five inches long. On the head there is a small crest-like fin, which the fish is capable of erecting or depressing at pleasure; on the top of the head, between the eyes, there is a triangular prominence pointing backwards, and red about it's edges: the skin at the angle of the upper jaw is loose, and projecting; the dorsal fin extends from the hind part of the head almost to the tail; the ventral fin is small; the vent is situated under the ends of the pectoral fins; the body is smooth and slippery; and the colour is brown, and maculated.

BLENNY, GATTORUGINE. This curious species is seven inches and a half long. The body is smooth, and compressed on the sides; the belly is a little prominent; and the vent is situated as in the crested Blenny. The teeth are so extremely slender and thick set, that they appear almost setaceous: between the eyes there is a slight depression; and above each, exactly on the summit, there is a narrow loose membrane, trifurcated at the top, the distinguishing mark of the species. The pectoral fins, which are broad and rounded, consist of fourteen rays, extending beyond the webs, and giving a scolloped appearance to the edges; the ventral fins are like those of others of the genus; the dorsal fin consists of fourteen strong spiny rays, and nineteen soft rays, the last of which are the highest; the anal fin hath twenty-one rays, the ends in every fin extending beyond their webs; and the tail, which is rounded at the extremity, consists of twelve rays, divided towards their extremities. The colour of this species is dusky, marked across with wavy lines; the belly is of a light cinereous hue; and the lower part of the pectoral fins, as well as the extremities of the ventral fins, are of an orange colour.

BLENNY, SMOOTH. This very active and vivacious species frequents the rocky coasts of Anglesea; and, by the assistance of it's ventral fins, creeps up between the stones with great facility after the ebb has left them. It seems to subsist on shells and small crabs; and is so very tenacious of life, that it will live near a day out of the water. The general length of this fish is about five inches; the head is large, and sloping suddenly to the mouth; the irides are red; the teeth, which are slender, sharp, and close set, consist of twenty-four in the superior, and nineteen in the inferior jaw; the pec-

toral fins are broad and rounded, and composed of thirteen rays; and the ventral fins of no more than two thick rays, separated near the ends: the dorsal fin consists of thirty-two soft rays, and reaches from the hind-part of the head almost to the extremity of the tail. The vent is placed in the middle of the body; the anal fin extends almost to the tail, and consists of nineteen rays, tipped with white; and the tail is rounded at the extremity, and composed of twelve branched rays. The colour of this species varies considerably: in some it is quite black; in others, a deep olive, delightfully marbled with a still deeper colour; and others are spotted with white, sometimes disposed in rows above and beneath the lateral line.

BLENNY, SPOTTED. This fish is about six inches long. The sides are extremely compressed, and very thin; the head and mouth are small, the last pointing upwards, and the lower jaw sloping considerably towards the throat: the teeth are small; and the irides are of a whitish colour. The pectoral fins are rounded, and yellowish; and, instead of ventral fins, it has two minute spines; the dorsal fin consists of seventy-eight short spiny rays, running almost the entire length of the back: on the top of the back there are eleven round spots, which reach the lower half of the dorsal fin; these spots are black, and half encircled with white. The vent is placed in the middle of the body; and the anal fin extends from it almost to the tail. The back and sides are of a deep olive colour; the belly is whitish; and the tail is of a yellow hue, and rounded at the extremity. This species likewise frequents the coasts of Anglesea, and is used as a bait for larger fish.

BLENNY, VIVIPAROUS. This remarkable species was first discovered by Schonevelde, and afterwards found by that ingenious naturalist, Sir Robert Sibbald, on the coasts of Scotland. These fish generally bring forth two or three hundred young at a time. Their season of parturition is very early in the spring; and before midsummer they quit the bays and shores, and retire into the deep. Their flesh, which is very coarse, is used only by the poor.

Blennies are common in the River Esk, as well as at Whitby in Yorkshire, and some other parts of England. They are sometimes caught of the length of a foot. Their bodies are slender; their skins are smooth and slippery; their dorsal fins commence just behind their heads, and unite with those of their tails; their pectoral fins are rounded; their ventral fins consist of no more than four short rays each; their anal fins extend far, and unite with their tails; and their tails themselves are rounded. The tips of their tongues, their chins, throats, and anal fins, are of a fine yellow colour; and their dorsal fins, backs, and sides, are of a yellowish brown, stained with dusky lines and spots.

BLICEA. A small fish of the harengiform kind, commonly caught in the German and other seas; and supposed to be the same with the English sprat, which some naturalists regard as the young of the herring.

Blicea is likewise the name of a fresh-water fish of the malacostomous or leather-mouthed kind; seemingly the same with the more common kind of ciraslius.

Blicea is also the name of an East Indian fish, which might more properly be called the harengus minor Indicus, or lesser Indian herring. It is harengiform in most particulars, except that it is somewhat more depressed, and thinner. It is exactly of the

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the same colour with the herring; the tail also is forked; but the head is of a singular figure, the eyes, and the extremity of the snout, being extremely large.

This fish is principally caught on the Malabar coast. It is extremely well tasted; and is cured with greater facility than most other East India fish: it is therefore much valued, and sent into all the neighbouring parts of the country in pickle. The natives also use it for another very beneficial purpose, at those seasons when it is very plentiful; namely, that of manuring land on which rice is intended to be sown.

BLIEGG. A German appellation for the fish usually called the bleak, the albula and alburna of naturalists.

BLIKE. A name sometimes given to an anadromous fish somewhat resembling our river-chub; called by Gesner capito anadromous; but more generally known by the title of zerta.

BLIND. A Cornish name for the *asellus luscus*, commonly called the bib. It is a fish of the cod kind, but never grows to any considerable size.

BLIND SERPENT. A reptile very common at the Cape of Good Hope, furnished with black scales, spotted with brown, red, and white. It is often found in the clefts of rocks, and similar situations, where it is easily dispatched. It does not appear to be very fierce; and its bite is said to be less dangerous than that of most other serpents.

BLIND-WORM. A very harmless reptile, though formidable in appearance. The usual length of this species is eleven inches; the irides are red; the head is small; the neck is still more slender, and from it the body suddenly increases, and continues of an equal bulk to the tail, which is blunt at the end. The colour of the back is cinereous, marked with very small lines composed of minute black specks; the sides are of a reddish cast, and the belly is dusky, but both are maculated like the back. The tongue is broad and forked; the teeth are minute and numerous; and the scales are small. The motion of this reptile is slow; from which circumstance, as well as from the smallness of its eyes, its names are derived; some calling it the slow, and others the Blind-Worm. Like all the rest of the kind in our climates, they lie torpid during the winter, being sometimes found in vast numbers twisted together. This animal resembles the viper in bringing forth its young alive.

Dr. Borlase, who mentions a variety of this serpent with a pointed tail, tells us, that he was informed that a man lost his life by the bite of one in Oxfordshire. It is probable, however, that the informant mistook the black, or dusky viper, for this kind; for it does not appear that any other reptile in this country can communicate poison by its bite. In Sweden, indeed, there is a small reddish serpent, called the *asping*, the *coluber chersea* of Linnaeus, the bite of which is said to be mortal: and it is possible that this species, though yet unnoticed by our naturalists, is to be met with in some parts of Britain; and that its bite may be attributed to the Blind-Worm.

BLOOD-HOUND. A species of the canine genus which was highly esteemed by our ancestors, who employed it in recovering such game as had either escaped from the hunters in a wounded state, or had been killed and stolen out of the forest. The faculty of smelling in this creature was very remarkable: it traced the lost animal by the blood it had spilt; and, with the utmost certainty, discovered

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the robber, whose footsteps it traced through secret and impervious paths at the greatest distance, nor ever desisted from the pursuit till it had overtaken him.

During the civil wars in Scotland, Blood-Hounds were employed on various occasions; and the poetical historians of those two heroes, Bruce and Wallace, frequently relate very curious anecdotes respecting the services rendered by those animals to their masters, together with their escapes from those of their enemies. They were also much valued on the confines of Scotland and England, where the inhabitants of the marches were continually preying on the herds and flocks of their neighbours. History likewise informs us, that King James VI. of Scotland, before he ascended the English throne, made use of these sagacious animals in discovering a race of Cannibals and robbers which had long infested the county of Fife; and, sheltered in a dark cave of considerable extent on the sea-coast, had eluded the vigilance of the neighbouring inhabitants for many years.

The genuine Blood-Hound breed was large, strong, muscular, broad-chested, of a stern aspect, of a deep tawny colour, and generally marked with a black spot over each eye. This species, however, seems now to be entirely blended with the terrier and harrier; and the stock is consequently lost.

BLOWING-SNAKE. A name given by the natives of Virginia to a species of serpent very much resembling the European viper, but considerably larger, and very remarkable for inflating and extending the surface of its head before it inflicts its bite.

BLUE-BIRD. This beautiful animal, as described by Bellonius, entirely resembles the black bird, except in its colour. It inhabits the Alps, and always selects the most craggy rocks and most stupendous precipices for its retreat. Being very rarely caught, it is highly esteemed even in those countries where it breeds; but still more so when carried into foreign lands. It not only sings most delightfully, but is capable of being taught to speak articulately; and is so extremely docile and observant, that, if waked during the night-time by any of the family to which it is accustomed, it will speak and whistle at the word of command. About the beginning of winter, its colour becomes black, and changes again to its original hue on the first approach of spring.

The Blue-Birds build their nests in deep holes in very high and inaccessible solitudes; thereby removing them not only from the reach of man, but also hiding them with surprising art from the chamois and other wild beasts which might annoy their young.

Fowlers are said to catch these beautiful birds in the following manner. Having discovered where they build their nests, they take with them strong stilts, or stakes, such as the climbers of rocks make use of to assist them in their ascent; by means of which they mount such places as indifferent spectators would think impossible to be ascended; at the same time covering their heads, in order to ward off any danger from the falling of pebbles or stones above them. At length, having arrived at the nests with extreme toil and labour, they draw them up from the holes in which they are usually buried, and cherish the young with an assiduity equal to the pains they take in obtaining them.

The Blue Bird, for the most part, produces five young,

BOA

young; it rarely visits the champion country; flies swifter than a blackbird, and subsists on the same kind of food.

BLUE-BIRD, RED-BELLIED. This bird is a native of Surinam. The bill is slender, sharp-pointed, of a moderate length, and of a dark lead-colour; the head, neck, breast, wings, tail, and the superior part of the back, are of a purplish blue, partly very bright, and partly obscure; but the sides of the head, the breast, and the coverts of the wings, are the brightest parts. The upper part of the neck, and the back, are of a dull dirty blue, with a slight tinge of green: from the inferior part of the bill, a little way down the throat, it is of a dark blue, or dirty colour; the quills and tail-feathers are of a black or dusky colour, the edges of the feathers being blue. The lower part of the back is of a light colour, with a faint mixture of rose; the covert-feathers of the tail are of a fine blue purple; the thighs, lower belly, and coverts under the tail, are of a dirty reddish orange; and the legs, feet, and claws, are of a dark lead-colour.

BLUE-CAP. A species of fish of the salmon kind, distinguished by broad blue spots on their heads, from whence they receive their name. They are supposed to breed on some foreign coast; but appear in our rivers at certain seasons, and particularly after a very violent north wind, when they are generally found in shoals.

BOA. An aquatic serpent of prodigious magnitude, which follows after herds of oxen, and from that circumstance receives its name. It sucks the teats of the cow; and, in the belly of one of these creatures, killed during the reign of the Emperor Claudius, a child is said to have been found almost entire. The bite of the Boa is said to be attended with immediate inflammation.

In the Linnæan system, Boa is a genus of serpents, with abdominal and subcaudal scuta, and without a rattle.

BOAR. The male of the hog kind.

BOAR, WILD. This animal, which is the original of all the varieties of the hog kind, is neither so stupid nor so filthy as that which is commonly reduced to tameness. The body is much smaller than that of the tame hog; the snout is longer, and the ears, which are black, are rounder and shorter. The Wild Boar does not vary in its colour like the domestic kind, being always of an iron-grey, inclining to black. The feet and tail are entirely black; the tusks are larger than those of the common hog, some of them, as Buffon asserts, having been found almost a foot long; these tusks grow both from the upper and under jaw, bending upwards in a circular direction, and being exceedingly sharp at the points. The whole litter of pigs follows the sow the three first years; and the family live in one common herd, uniting their forces against the wolf, or other beasts of prey: but no sooner is the Wild Boar arrived at a state of maturity, than it becomes conscious of its own strength, and traverses the forest undaunted and alone; it has then no apprehensions from any single enemy, disdains to fly even from man himself, nor ever discovers the smallest degree of fear.

The Wild Boar inhabits most parts of Europe, except the British Isles and the countries north of the Baltic. It is found in Asia, from Syria to the borders of the Lake Baikal; and, in Africa, on the coast of Barbary. But in the forests of South America these animals roam in prodigious droves, and are extremely beneficial to that country, by clearing

BOA

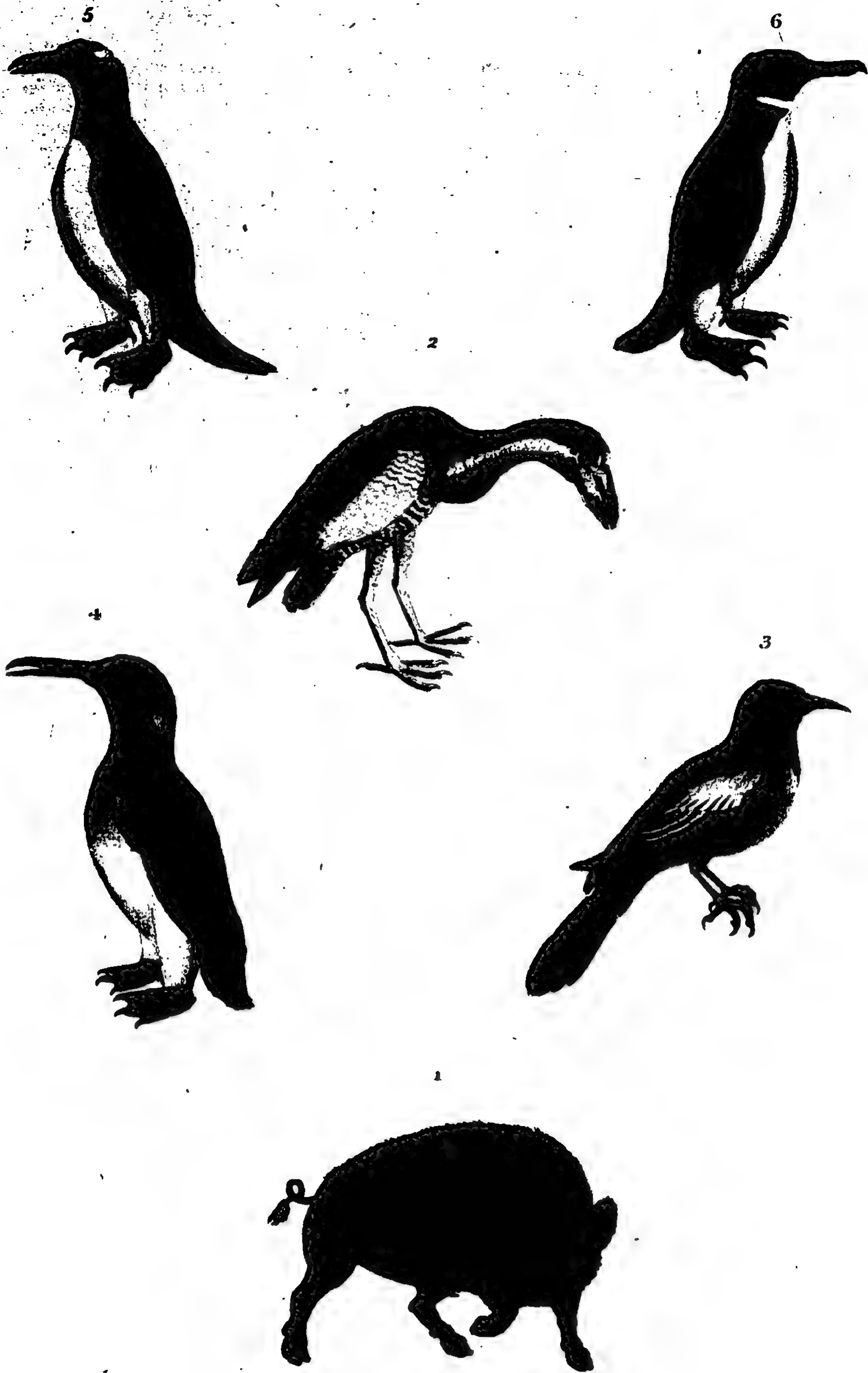
it of rattle-snakes, which they devour with safety. They subsist chiefly on roots and vegetables; and being satisfied with such provisions as can be procured without danger, they seldom attack any other animals: but if any creature happens to die in the forest, or is so wounded as to be rendered incapable of making resistance, it soon becomes the prey of the Wild Boar; for that creature never refuses animal food, however putrid, if it can be procured without difficulty; and, barring accidents, it generally lives to the age of twenty-five or thirty years. The rutting-time of the female is in December, and continues for about three weeks.

The general places of rest of these animals are among the thickest bushes which they can find. In April and May they sleep more sound than during any other months of the year, and are therefore then caught in toils with more facility than at any other season.

The Wild Boar, among huntsmen, has several names, according to its different ages: the first year, it is called a pig of the faunder; the second, a hog; the third, a hog-steer; and the fourth, a Boar.

Hunting Wild Boars is a very favourite diversion among the nobility of those countries which they inhabit; and the best season for this purpose is between the months of September and December. For this purpose small mastiffs are generally used; the hunters being regardless of the acuteness of their smell, as the Wild Boar leaves so strong a scent, that it is impossible for them to mistake his course. When the Boar is driven from his covert, he proceeds slowly and regularly, at a small distance, before his pursuers, without betraying any strong indications of fear. Once in about half a mile, he turns round, stops till the hounds come up to him, and then offers them battle. The dogs, sensible of their adversary's strength, keep off, and bay him at a distance. After gazing on each other for some time, the Boar proceeds leisurely on its course, and the dogs renew the pursuit. The chase is thus continued till the creature, being quite weary, refuses to proceed. The dogs then attempt to close in upon it; and those which are young, and unaccustomed to the chase, being generally foremost in the attack, are commonly killed. The old experienced hounds wait till the hunters come up, who strike at the Boar with their spears, and soon dispatch, or at least disable it. Great caution, however, is necessary in aiming their blows; for this animal is extremely adroit at transfixing them on his snout, or tusks; and, on being only partially wounded, attacks the huntsman in a very furious manner. The most vulnerable parts of the animal are either between the eyes, or the shoulders; in both which places the wound, if driven home sufficiently, proves mortal. When the Boar makes at the hunter, his safety consists entirely in his courage and address; for, if he flies, he is inevitably overtaken, and destroyed. If the beast attacks him in a straight direction, it is to be received at the point of the spear; but if it makes doubles and windings, it is to be watched very cautiously, for it will attempt to catch the spear in its mouth, in which case nothing can save the combatant but another person's attacking the Boar behind.

The modern way of Boar-hunting, is to dispatch the creature by contriving that all the hunters strike at the same instant. But the ancient Roman method was for a person on foot, armed with a spear,



1. WILD BOAR. 2. BOAT BILL. 3. LESSER BONANA-BIRD 4. NEW GUINEA BOOBY.
5. PAPOU BOOBY. 6. WHITE COLLARED BOOBY.

spear, to keep the creature at bay; and in this situation the Boar would spontaneously rush against the spear, in order to get at its assailant, and thus be pierced and slain.

It is very remarkable, that the Wild Boar, in the West Indies, is subject to the stone; and it is not uncommon to find a considerable number in the same bladder, though they seldom exceed the weight of a scruple. Among physicians, the bladder of this animal has been reputed a specific for the epilepsy. Its tusks have likewise been esteemed efficacious in quinsies and pleurisies; but on what principle we are not competent to determine.

The Wild Boar was formerly a native of Britain, as appears from the *Leges Wallicæ* of Hoel Dda, who permitted his grand huntsman to chase that animal from the beginning of November to the middle of December. William the Conqueror punished with the loss of their eyes such persons as were convicted of killing either the Wild Boar, the stag, or the roe-buck. Fitz Stephens informs us, that the vast forest which, in his time, lay on the north side of London, was the retreat of stags, fallow-deer, Wild Boars, and bulls. And Charles I. turned out Wild Boars in the New Forest; but they were entirely destroyed during the succeeding interval of civil dissention.

BOAROLA, or BOARINA. A very small bird described by Aldrovandus; and which appears to be of the same species with the muscipapa, or fly-catcher.

BOAT-BILL. This bird, which appears to be of the same genus with the *tamatia* of Marcgrave, inhabits Brazil, Guiana, and other parts of South America; and is about the size of a crow. The bill is broad, depressed, sharp-pointed, and carinated; the forehead is white; the top of the head, the hind part of the neck, and the beginning of the back, are black; the rest of the back, wings, and tail, of a light cinereous colour; the neck is white on the under side; and the belly and vent are brightly ferruginous.

BOAT-FLY. An aquatic insect, the back of which is shaped like the bottom of a boat; and the hind legs, which are thrice as long as the fore, aptly enough resemble a pair of oars. Mousset affirms that this animal, contrary to most others of the insect tribe, possesses the faculty of swimming on its back.

BOCA. A species of the sparus. See **BOGA.**

BOCAMOLLE. An appellation given by some naturalists to a very large Brazilian fish, more usually distinguished by the name of *pira-jurumen-beca*.

BOCAQUE. This animal, which frequents the banks of the Nieper, has some resemblance to a rabbit. It has four teeth, two in the upper, and two in the under jaw; and the fur is of the colour of that of a badger. It burrows in the earth like a rabbit, from October to the end of April, when it traverses the fields in search of winter provisions, its principal subsistence being dry grass and hay. This animal, when domesticated, becomes very tame, and is capable of learning a number of antic tricks: it is very cunning, and keeps one of its own fraternity always on the watch while it feeds; the sentinel making a whistling kind of noise, to apprize the other of any danger.

In Carolina, animals of this kind have obtained the name of hares; and they principally frequent marshes and meadow-grounds. The females conceal their young from the males, after the same

manner as European rabbits. When one of them is started and pursued, it takes shelter in some hollow tree; but the hunters drive it from thence, by making a fire below. On the isthmus of Darien, they are as large as English hares, but destitute of tails; their ears are small and short; their claws are long; and they commonly lodge about the roots of trees. Labat informs us, that there are several sorts in the Brazils; and that the flesh of all of them is very sweet, and more juicy than that of animals of the hare kind in Britain.

BOCCA. An appellation given by some naturalists to the fish more commonly known by the name of the *uranoscopus*, or star-gazer. It is a species of the *trachinus*; and is distinguished from the other kinds by having a great number of beards on the lower jaw.

BODIANO. An American fish of the size of a perch, having a purple back, and yellow belly and sides. It is more commonly known among naturalists under the name of *pudiano*.

BODTY. A species of American snake of the *amphisbæna* kind, called also *ibijara*.

BOGA. A fish caught in the Mediterranean sea, called *boops* by most authors, and evidently a species of the *sparus*. It is about a span long, and of a slender, roundish figure; the scales are pretty large, and of a yellowish olive colour; the lateral lines are dark and broad; and beneath them on each side are four golden parallel lines, of a silver colour, running from the head to the tail: the eyes are disproportionably large, whence the name of *boop*; or *ox-eye*; the irides are of a silvery hue; and the mouth, which is of a middling size, is furnished with very small teeth. There are several species of this fish.

BOICININGA. A Brazilian term for the rattle-snake.

BOIGUACU. A Brazilian serpent, called *colrade vead* by the Portuguese, and supposed to be the largest of all the reptile tribe. Borritius asserts, that he preserved the skin of one of them which he had himself killed, and found it to be twelve yards long; and farther avers, that a serpent of this kind was killed in the island of Java, which was thirteen yards and a half long, and that its belly contained an entire boar: and De Laet assures us that, in the Rio de la Plata, there are some of them so very large, as to swallow a whole stag. This formidable animal is thickest in the middle of the body, and grows shorter and smaller towards the head and tail. On the middle of the back, there is a chain of small black spots which runs the whole length of the animal; on each side there are large round black spots, at some distance from each other, with a white spot in their centre; and between these, near the belly, there are two rows of lesser black spots, which run parallel to the back. It has a double row of sharp teeth in each jaw, of a whitish colour, and shining, like mother-of-pearl: the head is broad; over the eyes there are two prominences; and near the extremity of the tail there are two claws, which resemble those of birds.

These serpents lie hid in thickets, from whence they fall out unperceived; and, raising themselves erect on their tails, attack man and beast indiscriminately. When exasperated, they make a loud hissing noise; and sometimes ascend trees, from which they dart down on travellers, and twirl themselves so closely round their bodies, that they dispatch them in an instant. Condamine, however, asserts, that their bite is not dangerous; for though

their teeth are so large as to inspire the beholders with terror, the wounds they inflict are not attended with any fatal consequences. Others affirm, that they haunt desert places; and that though they are sometimes seen near great towns, or on the banks of contiguous rivers, they make their appearance only after some great inundation; that they never saw any but such as were dead; and that they appeared to them like the trunks of large trees lying on the ground.

BOIOBI. An American serpent, called by the Portuguese cobra de evrd. It is about an ell long; of the thickness of a man's thumb; and of a very beautiful shining green. Its mouth is very large; and its tongue is black. It seems to have a predilection for houses; and never injures any creature unless provoked or hurt; but, when either of these is the case, it will bite, and its poison is then very fatal. The natives use the root caa-apia bruised, and taken in water, as an antidote against the infection.

BOIQUIRA. A name sometimes given by the natives of America to the rattle-snake.

BOITIAPO. A Brazilian serpent, called by the Portuguese cobra de cipo. It grows to the length of seven or eight feet; and its body is as thick as a man's arm, round, and pointed towards the tail like a shoemaker's awl. It is covered with very fine scales of a triangular form, and of an olive and yellowish colour. It lives on frogs, and other small reptiles. Its bite is dangerous; but it is supposed that its flesh might be effectually used, like that of the viper, as an alexipharmic and purifier of the blood.

BOLINTHOS. The Aristotelian name for the bonasus, the monops of Ælian.

BOM. An American serpent, remarkable for the noise it makes, which sounds like the word used for its name. It grows to a very considerable size; and does not seem to possess any noxious qualities.

BOMARIN. A name given by some naturalists to the hipopotamus, or river-horse.

BOMBARDIER. A species of insect, called also buprestis; the wings of which are inclosed in a kind of case that entirely enfolds them. It conceals itself among stones; and seems to make little use of its wings, moving by a kind of spring; but, when touched, makes a noise resembling the discharge of a musquet in miniature, during which a blue smoke seems to be emitted from its anus; and by slightly scratching its back with a pin, it may be made to play off its little artillery at any time. Rolander, who first made these observations on the insect, informs us, that it is capable of giving twenty discharges successively; that a vesicle, placed near the anus, seems to be the arsenal from whence it derives its store; that this provision and furniture constitute its chief defence; and that the smoke emitted by it appears to be entirely inoffensive, and can only operate, either in intimidating its enemies, or concealing its own flight.

BOMBINA. A species of the rana, belonging to the order of reptiles.

BOMBYLIUS. The classical name for the humble-bee; of which Ray, in his history of insects, mentions no fewer than nineteen species, wholly different from each other. In the Linnæan system, it is a genus of the order of diptera.

BOMBY LOPHAGES. The humble-bee-eater. A fly of the tipula genus, larger and stronger than the common kinds, and extremely

fond of honey; but, being ignorant of the method of extracting it from flowers, it seizes on the humble-bee, and destroys it, in order to come at its honey-bag. The body is of a blackish colour, the head is of a bright red; and the eyes are very large and prominent. It is chiefly found in mountainous places.

BOMBYLUS TEREDO. The name of a species of humble-bee, which eats its way into wood, and there forms its nest.

BOMBYX. The classical name for the silk-worm.

Bombyx is also applied by some authors to express a species of winged insects armed with a sting like that of the bee. It is shaped like a wasp, but is entirely black; and it inflicts a very severe wound with its sting, which it always loses in the act. It builds its nest of clay, which it works up into a very hard consistence, and fastens to a stone. It seems to be a species of the mason-bee.

BONANA-BIRD, LITTLE. This bird is a native of those countries where Bonana-trees commonly grow; and from thence receives its name. The body is about five inches long, and the tail an inch and a half; the bill is only one-third of an inch long, thick, and roundish; the head is large in proportion to the body; and its breadth, when the wings are extended, is nine inches. The feet are black, and armed with sharp black claws; the feathers on the back, as far as the tail, are downy, and of a deep blue colour; the breast is a lightish blue; the tips of the feathers on the belly are yellow; and the wings and tail are of a dark blue with a greenish cast.

BONANA-BIRD, LESSER. The bill of this bird is pretty thick towards the head, with a slight incurvation downwards, and sharp at the point, being of a dusky or blackish colour, except at the base of the lower chap, where it has a fleshy appearance; and is also surrounded with black feathers, which are very narrow on the head, but reach down to the eyes, and an inch deep on the throat. The head, and part of the neck, are of a greenish yellow or olive colour; and the whole body, both above and beneath, as well as the thighs, and the upper and under coverts of the tail, are of a fine vivid yellow; the lesser coverts of the wings, both internally and externally, are also yellow; but the row of covert-feathers immediately above the wings are mostly white on their exterior webs, forming a white space in the middle of the wings: the quills are black, except three or four of those next the back, the exterior webs of which are edged with black. Among the lesser coverts of the wings, near the bend, there is a little mixture of black; and the insides of the quills are of a dark ash-colour. The tail is composed of twelve black feathers of an equal length, the middle ones being the longest, and shortening gradually towards the sides.

This bird, which is a native of Jamaica, was brought from that island by Dr. Brown. It builds a long hanging nest, composed of the interior hair of a sort of moss, or herb, called old man's beard, which it carefully interweaves from the farther extremities of twigs of high trees, in the shape of a sack; and in these it lays its eggs, to preserve them from snakes and monkeys. A nest of this kind, brought from Jamaica, had the appearance, at first sight, of being constructed with horse-hair.

BONASIA. A species of the tetrao.

BONASUS. This animal, which the generality of naturalists confound with the bison, is evidently

mently a species of the cow-kind, and probably differs from the common breed rather by local than natural causes. The Bonafus is a very thick and bulky creature, and furnished with a mane like that of a horse. It is somewhat larger than our bull; the horns do not exceed a span in length, and are so turned as to be incapable of inflicting a wound; the nostrils are wide; and the ears are long and broad. The colour of the animal is a deep tawny, except that the forehead and the breast are white; and the mane is of a darker colour than the rest of the body. Like others of this kind, it has no teeth in the upper jaw before; the tail is short in proportion to the rest of the body; and the legs are covered with hair. It bellows loudly, like an ox; and, when pursued, does not attempt to defend itself with its horns, but kicks, and discharges its dung against its adversary, which is pretended to be of a hot and corrosive nature on such occasions, though not so at other times; a circumstance scarcely credible, says Ray, if there were not instances of other animals possessing a similar faculty.

BONITO. This fish, to which some naturalists give the name of bonettoe, is about three feet long, and two in circumference. It is often seen in company with the albicore, a fish nearly resembling itself, and frequently mistaken for the same. The Bonito has a sharp head; a small mouth; large gills; full silvery eyes; and a tail like a half moon. It has no scales, except on the middle of the sides, where a line of a gold colour runs from the head to the tail. It is greenish on the back and sides; but its belly shines like silver. It has seven fins; two on the back, two at the gills, a pair on the belly just below the gills, and one on the middle of the belly opposite the largest on the back: from the last on the back proceeds one very small and narrow, reaching to the tail; and another extends from the last on the belly to the tail in like manner.

BONT-VISCH. A Dutch appellation for an East Indian fish, which seems to approach to the nature of the European turdus, except that it is destitute of scales.

BOOBY, COMMON. This bird is generally found about the West Indian shores, and in several parts of the East. The Jamaica Booby is described by Sir Hans Sloane under the title of *avis fusca, anseri bassano affinis*. It feeds upon fish, diving under water after them; but is often robbed of its prey by the voracious albatross or man-of-war bird: and the frequent contests between these two birds are extremely diverting; the former shewing as great reluctance to part with its prey, as the latter is resolute in plundering the former. This species of Booby is shaped like a raven; the upper parts are of a greenish brown; the belly is white; and the feet resemble those of the duck tribe.

BOOBY OF NEW GUINEA. This species, which was first described by Sonnerat in his Voyage to New Guinea, is about three feet long. The head, the neck, and the fore part and top of the breast, are black; the back is of a bluish grey; the belly and legs are covered with white feathers; the wings are streaked with longitudinal lines alternately black, and of a greyish white colour; and the feathers which cover them are short, serrated, and arranged like scales. On each side of the head rises a bar, which is large and rounded at its beginning, and of a deep yellow colour; after which it grows narrow, and more pale, till it approaches the belly, when it

spreads itself over all its upper part. The feet are black, and scaly; and the bill is long, rounded, prominent, and incurvated at its extremity; of a black colour two-thirds of its length from the base, and yellowish from thence to the point.

BOOBY, WHITE-COLLARED. This bird is likewise a native of New Guinea; and is about a foot and a half in length. The head, throat, hind part of the neck, sides, back, wings, and tail, are black; the fore part of the neck, the breast, belly, and legs, are white; and feathers of the same colour form a semicircle round the lower part of the neck, which being contrasted with the surrounding black, has a very pleasing effect. The eye is surrounded with a naked membrane, of a blood-red colour; and the bill, the feet, and the irides, are black.

BOOBY, PAPOU. This species, according to Sonnerat, is about two feet long. The head and neck are greyish inclining to black; on the top of the head behind, there is a semicircular white bar; the back and tail are black; the wings are black in the middle, the exterior borders being grey, and the interior white; the breast, belly, and legs, are white; the irides are yellow; and the feet and bill are of a reddish hue.

This bird is a native of New Guinea, and receives its name from the Papoos, a people inhabiting that and the neighbouring isles; who, being seldom visited by navigators, are of course very little known.

BOOK-WORM. An insect of the moth-kind, which is bred from eggs deposited in books about the month of August, and afterwards becomes a fly. It pretty nearly resembles the mite, or blatta, found in corn; and when the time of its transformation approaches, it eats its way through, in order to breathe a freer air.

Various expedients have been adopted for counteracting the depredations of this noxious animal; but the best, and indeed the only security to books, is derived from mineral salts, to which every species of insects shews a strong aversion. For this purpose, book-binders ought to mix the salt known by the name of *arcanum duplicatum*, alum, and vitriol, with the paste used in binding; and by this precaution books may be perfectly freed from all the damages occasioned by this mischievous insect.

Mr. Prediger, in his Instructions to German Book-binders, printed at Leipzig in 1741, recommends the making paste of starch instead of flour; and the powdering slightly the books, their covers, and the shelves on which they stand, with a mixture of pulverized allum and fine pepper; and is also of opinion that, in the months of March, July, and September, books should be rubbed with a woollen cloth steeped in powdered allum.

BOOPS. A small fish commonly caught in the Mediterranean sea, about five inches in length, and remarkable for the largeness of its eyes. It is of a rounded shape, has large scales, and is deemed a species of the *sparus*. But, besides this common Boops, there are two other varieties: the one, commonly called *bouge-ravel*, is nearly about the size of the Boops; and the other kind is small, being no more than three inches long, and destitute of scales. Its mouth is small; and its eyes are extremely large.

Boops is also a name sometimes used to express a species of whale.

BOOR-WORM. A name given by some zoologists to the *solen lignorum*, a sea-worm which perforates the bottoms of ships.

BORBOETHA.

BORBOTHA. A name sometimes applied to the *mustella fluviatilis*, or eel-pout. See **GADUS**.

BOS, the Ox. This animal, in the Linnæan system of zoology, is a genus of quadrupeds of the order of pecora; the characters of which are, that the horns are hollow, turned forward, bent like crescents, and smooth on the surface; the fore-teeth are eight in number; and there are no canine teeth. Of this genus, besides the common tame species, there are four naturally wild; the bison, the bonasus, the bubulus, and the urus.

BOS GRUNNIENS, or GRUNTING Ox. This is a species of Ox with a mane on it's neck, the whole body covered with long hair, a haunched back, and a tail like that of the horse. It seems to be a native of the country of the Calmucs; and derives it's name from the noise it makes, which resembles that of a hog.

BOS INDICUS, or INDIAN Ox. This is another variety, having a large prominence on the shoulders, and short horns bending close to the neck, in some species; but almost erect, and bending a little forward, in others.

In Surat there is found a small species not larger than a mastiff-dog, but having a fierce countenance, and generally employed by the natives in drawing their children in carts.

BOSCHIAS. A name sometimes used to express the *anas torquata minor*, or smaller ring-duck.

BOTABOTA. A name for that species of sea-swallow, the nests of which are so famous in China, as well as in some parts of Europe, for making soups. These nests, which are composed of a delicious viscous substance, are esteemed restorative, and provocative; and for this last quality they are held by the eastern nations in the highest repute.

BOTATRISSO. An appellation given by Bellonius, Gesner, and other naturalists, to that species of the gadus called by some *lota*, and *mustella fluviatilis*; in English, the eel-pout. It is distinguished from the other gadi by having two fins on the back; and by the two jaws being of equal lengths with beards at the mouth.

BOTAURUS. A classical name for the bird known among Europeans by the title of the butter-bump, bittern, or mire-drum.

BOTOTOE. A beautiful bird of the parrot kind, very common in the Philippine Isles; being somewhat smaller than the common parrot, and entirely of a fine deep blue colour.

BOTTLE-NOSE. A name common in some counties of England for the *anas arctica Clusii*.

BOTTS. A species of worms which infest horses and other cattle. This name is also applied to a sort of grubs which destroy the grass in bowling-greens.

BOUGE RAVEL. A species of the boops, caught in the Mediterranean Sea. The nose is long and pointed; the back is of a reddish blue; the tail is red; the belly is of a fine silvery white; and the whole body is shorter and broader than that of the common kind of boops.

BOUNCE. A provincial name for a species of the squalus, distinguished by Artedi by the name of the reddish variegated squalus, with the pinna ani in the middle space between the anus and the tail. This fish is called *scymnos* and *scylius* by ancient naturalists, and *catulus major* by the modern ones.

BOUTAEL. An East Indian fish of the lam-

prey kind; called also *neegen oogen*, and by Ray, *lampetra Indica*. It is found in lakes, ponds, and other standing waters; and is very wholesome and well-tasted. It's general description, however, indicates it to be rather of the *mustella* than the *lampetra* kind; but if, as it's name expresses, it has several apertures for the gills, it is absolutely a new genus of fish.

BOUVIERA. A name given by some naturalists to a small, broad, and flat fresh-water fish, more usually called *bubulca*.

BOYEUEPECANGA. A very large and remarkably thick serpent, distinguished by this name on account of certain prominencies on it's back. The poison of this reptile is reckoned highly deleterious.

BOYUNA. An American serpent, of a long and slender shape, and entirely of a black colour. It's smell, which resembles that of a fox, is so very strong, as to be almost intolerable.

Boyuna is likewise the name of a Ceylonese snake, so very harmless, that it is a favourite animal among the natives, who consider the meeting it as a propitious omen.

BRACHIONUS. A genus of animalcules of the anthrodia kind, containing all the wheel animals.

BRACHURI. A name given by Dr. Hill to a genus of animalcules of the tailed kind. They are of a roundish figure; their tails are shorter than their bodies; and their skins are perfectly smooth, thin, and colourless. They are frequently found in ponds, in peppermint-water, and in many other infusions of vegetable substances.

BRACHYPTERA. The name of a genus of birds of the class of hawks, distinguished by the shortness of their wings. This appellation is derived from *Brachus*, Short; and *Pteron*, a Wing.

Hawks of this genus have such short wings, that, when folded, they do not nearly reach to the end of their tails. Of this genus are the goshawk, the sparrow-hawk, and the different species of the butcher-bird.

BRADYPUS. A Linnæan genus of quadruped called *anthropomorpha*; by some naturalists termed *ignavus*; and, in English, the sloth. It's characters are, that the mouth is destitute of fore-teeth; the canine teeth are obtuse, and longer than the grinders, of which there are five on each side; the body is covered with hair; the feet have no great toes, and are formed for climbing; and on the breast there are two paps. There are only two known species of this genus: the one is called the American sloth, with a short tail, and three toes on each foot; and the other is named the Ceylon sloth, with only two toes on each foot, and no tail.

BRAMBLING. This bird, which is sometimes called the mountain-finch, and at others the sea-lark, is larger than the chaffinch, and belongs to the sparrow class of aves. The top of the head is of a glossy black colour, slightly edged with a yellow brown; the back feathers are of the same colours, except that their edges are more deeply bordered with brown; the chin, throat, and breast, are orange; the lesser coverts of the wings are of the same colour, but those incumbent on the quill-feathers are barred with black tipped with orange; the interior coverts at the bases of the wings are of a fine yellow; the quill-feathers are dusky, but their exterior sides are edged with yellow; the tail is slightly forked; the exterior web of the outmost feather

B R E

feather is white; and the others are black; except the two middle ones, which are edged and tipped with ash-colour.

BRAMBLING, or MOUNTAIN FINCH OF LINNÆUS. This species seems to be quite different from the former. The male is black above, and the edges of the feathers are irregularly tinged with a dark iron colour; the belly is white; the breast and exterior bases of the wings are of a gold colour, but the interior bases are of a deep yellow. The prime feathers of the wings are black, their outer edges being white; and four of these feathers, as well as those which follow towards the bases, are externally half white and half black. The principal feathers on the tail towards the outside are black; but, between them, there are several which are white on their external sides towards their bases.

The female Brambling is brown in those places where the male is white, and cinereous where he is of a deep yellow. Under the bases of the wings, she is of a beautiful yellow; under the vent, of an irregular yellow; and the prime-feathers of the wings and tail are of the same colour with those of the male.

BRANCHIOSTEGI. A term expressive of one of the general classes of fishes; the characters of which are, that the rays of the fins are of a bony substance, but they have no bones, or ossicula, at the branchiæ, as all the malacopterygious and acanthopterygious fishes have. The above term is derived from Branchia, Gills; and Osteon, a Bone.

BRANDARIS. A species of the Strombus, in the order of testacea.

BRAND-HERRING. A kind of herring, so called by the Dutch.

BRANLIN. A species of fish of the salmon kind, called in some parts of England the fingery; which name it obtained from five or six transverse black streaks on each side, having the appearance of the impression of so many fingers, and each marked with a single red spot. The tail of this fish is forked like that of the salmon; and it has been supposed by some that they are all of the male kind. They seem to impregnate the spawn of the common salmon; and are found in waters of so rapid a current, that scarcely any other species of fish could live in them. Willughby, however, observes, that they never attain to any considerable size.

BRASEM. A name by which some naturalists have called an American fish of the sinaris kind, more commonly known by its Brazilian name, acaropeba.

BREAM. A river fish of the leather-mouthed kind, reckoned a species of carp, and called by the generality of naturalists cyprinus latus. It is found in lakes, and in the deepest parts of still rivers. The body is extremely deep and thin in proportion to its length; the back is much elevated, and very sharp at the top; the head and mouth are small; and, during the spring, the animal is sometimes covered with abundance of minute whitish tubercles. The scales are very large, and the sides are flat and thin. The dorsal fin has eleven rays, the second of which is the longest; and that fin, as well as all the rest, are of a dusky colour. The back is of the same hue; the sides are yellowish; and the tail, which is remarkably large, represents a crescent. The flesh of the Bream is very little esteemed, being extremely insipid to the taste.

BREAM, SEA. A fish of the sparus kind, found

B R O

in the seas near Surinam, and growing to the length of three or four feet. The eyes are large; and the snout, belly, fins, and tail, are of a pale red colour. It is caught among the rocks in deep water; and its flesh is very agreeable food.

BREEZE-FLY. See *ŒSTRUM*, and *GAD-FLY*.

BRENT GOOSE. A fowl of the goose kind, in many respects resembling the barnacle, but of inferior size. The bill is an inch and a half long; the colour of which, as well as the head, neck, and superior part of the breast, is black; and on each side of the slenderest part of the neck there is a white spot: the lower part of the breast, the scapulars, and coverts of the wings, are ash-coloured, clouded with a deeper shade; the feathers, both above and below the tail, are white; and the tail, the quill-feathers, and the legs, are black.

The Brent Geese frequent the coasts of the British Isles in winter. They feed on a sort of long water-grass; but prefer the roots, and those parts of the stalks immediately above them, which they dive for, bite off, and leave the upper parts to drive with the tide. In Ireland they are extremely numerous; particularly near Londonderry, Belfast, and Wexford, where they are taken in nets placed across the rivers. Their flesh is much admired for its delicacy.

The rat, or road-goose, of Willughby, agrees in so many respects with the Brent Goose, that it is probably no other than the young bird not full-feathered; the only difference consisting in the feathers next the bill, and those on the throat and breast, being brown. However, Willughby, Ray, and Buffon, very properly describe the barnacle and the Brent Goose as two different species; while Linnæus, in his *Fauna Suecica*, makes them synonymous, and describes the true barnacle as the female of the white-fronted wild-goose.

BRESILIA. A species of tanagra, in the order of passeræ.

BRESMA. A name given by several authors to the bream, a species of cyprinus.

BRET. A provincial appellation of the common turbot.

BRICK. A species of lamprey, called *lampetræ medium* genus, and distinguished from the other lampreys by a number of very long and narrow black transverse spots.

BRISSEIDES. A genus of the echini marini; the distinguishing characters of which are, that their figure is oval; their backs are striated; and their rays are smooth. There are two known species of this genus: the one is flat, and called by some the cranium; and the other, called the amygdala, is high, and usually found fossil immersed in flint.

BRISSUS. Another genus of the echini marini; the characteristics of which are, that they are of an oval figure, and have the aperture of the anus situated on one side of the superficies. Their backs are smooth and even; but, on the vertex, they have several very elegant crenated and dotted lines. The base appears as if cut off on the extremity nearest the mouth; and is not flat, as in the spatangi, but raised after the manner of a cushion.

BROAD-WORM, or LUMBRICUS LATUS OF LINNÆUS. A name given to the tænia, or tape-worm.

BROCADE-SHELL. An appellation given to a species of the cylindrus. It is of a silvery colour, variegated with brown.

B U C

BROCK. A term used by sportsmen to express a badger; and also to denote a hart in it's third year.

BRONCINI. A name given by some naturalists to the lupus, or sea-wolf; called, in English, the wrasse.

BRUTE. In the Linnæan system, the second order of mammalia; the characters of which are, that they have no upper or under fore-teeth; their feet are armed with strong hoofs; they are not formed for swift or stately motion; and they masticate their food. This order comprehends six genera, and seventeen species.

BUBALINUS SERPENS. This serpent, the anaconda of the Ceylonefe, is a very formidable reptile, and extremely destructive to cattle; from which circumstance it receives both it's classical and Indian name.

BUBALUS. A species of wild bull, supposed by modern naturalists to be the same with the bison and urus.

BUBO. See OWL.

BUBULCA. A fresh-water fish, called by some naturalists bouviera and petense. It is small, flat, and extremely short; rather of a circular than an oblong shape; and of a fine silvery white colour.

BUCA. A name sometimes given to the buccinum.

BUCAO. A species of screech-owl very common in the Philippine Isles. It grows to the size of a peacock, and is a very beautiful bird; but it's nocturnal scream is as hideous as can well be conceived.

BUCARDIUM. A name given by some conchologists to a kind of heart-shell, so called from it's fancied resemblance to an ox's heart. It is of the genus of cordiformes, or heart-shells; and differs from other kinds in being more globular.

The cabinets of the curious afford us seven species of this shell; namely, a yellow furrowed one; a grey spinose one; a white furrowed one; a thicker narrow one; a thick one, with a cardo separated from the apex; a thick kind, with the cardo at the apex; and the bastard Noah's ark.

BUCCEPHALUS, or MOSCHEPHALUS. This animal, which is of the size of a hind, is of a shape between the hind and the heifer; and approaches pretty near to the gazelle tribe, of which it appears to be a variety. The head, legs, and hoofs, are long and slender; the tail, which is a foot long, resembles that of a cow; the head is of a reddish colour; and the horns are black, smooth at their tops, and rough below. This animal has two udders; and is very mild, tractable, and sportive.

BUCCINA. A family of shells, called whelks in English; the general characters of which are, that their mouths are an oblong, or very lengthened, oval; the upper parts of which are produced or lengthened into gutters or slight beaks.

The immense quantities of species this family contains, as well as their numerous subordinate characters, have produced such perplexity and confusion among conchologists, as can scarcely be unravelled.

According to the accurate Da Costa, the family of Buccina, or whelks, may be divided into the six following genera:

BUCCINA CANALICULATA, vel Buccina rostro canaliculato. Guttered whelks, or those whelks the upper parts of whose mouths terminate nearly in straight and somewhat prolonged gutters.

BUCCINA RECURVIROSTRA, vel Buccina ore

B U F

quasi abscisso, canaliculo recurvo; Buccina plagio-
ostoma. Wry-mouthed whelks; or those whose mouths are, as it were, cut short at their tops; for the gutters or beaks do not extend straight forward from the superior parts of their mouths, but bend or fall on their backs in a wry manner, exactly like the mouths of soles and other flat fish.

BUCCINA ROSTRATA, vel cum rostro longissimo. Beaked whelks; or those which have very long beaks, such as the crane, the spindle, the purpuræ, and others.

BUCCINA UMBILICATA. Umbilicated whelks; or such as have an umbilicus or perpendicular hollow, or navel, along-side the columella or pillar-lip, on the first or body whirl.

BUCCINA COLUMELLA DENTATA, vel Plicata. Whelks with wrinkled or plaited pillars; and in these the columella, or pillar-lip, is wrinkled, ridged, or worked with plaits.

BUCCINA, STROMBI, or needles, having very long and taper clavicles or turbans, and wry-mouths turning on their backs, in some species of such lengths as to resemble spurs.

In the Linnæan system, the Buccina form a distinct genus of the univalve and spiral testacea. Those species most usually met with on the coasts of the British Isles are the brown, massy, waved, striated, reticulated, and small Buccina. The inclosed animal is a slug.

BUCCO. A genus of birds of the order of picæ.

BUCEROS. A species of raven found in the East Indies, Tartary, and China. The head, neck, rump, and tail, are of a fine glossy black, without the least intermixture of any other colour. It is about the size of a full-grown pullet; the head is disproportionably large; and the beak has a considerable gibbosity towards the base, rising above the rest of the surface.

BUCEROS likewise forms a genus of birds of the order of picæ in the Linnæan system. The beak is convex, and bent backwards; the upper chap is longer than the under; the nostrils are situated near the base of the beak; the tongue is acute and short; and the feet are formed for walking. Of these birds there are four distinct species.

BUCK. The male of the fallow-deer, the female of which is denominated a doe.

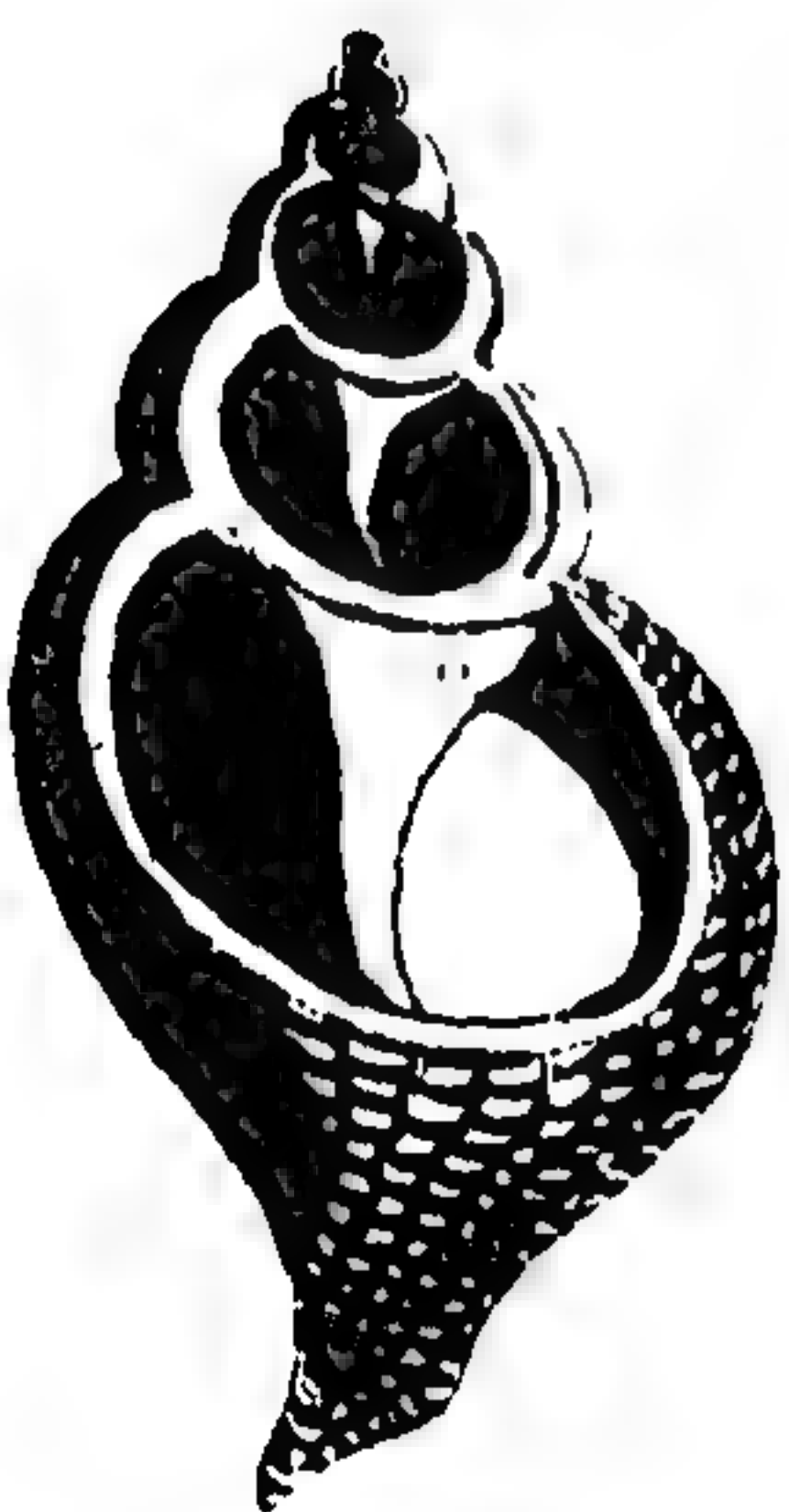
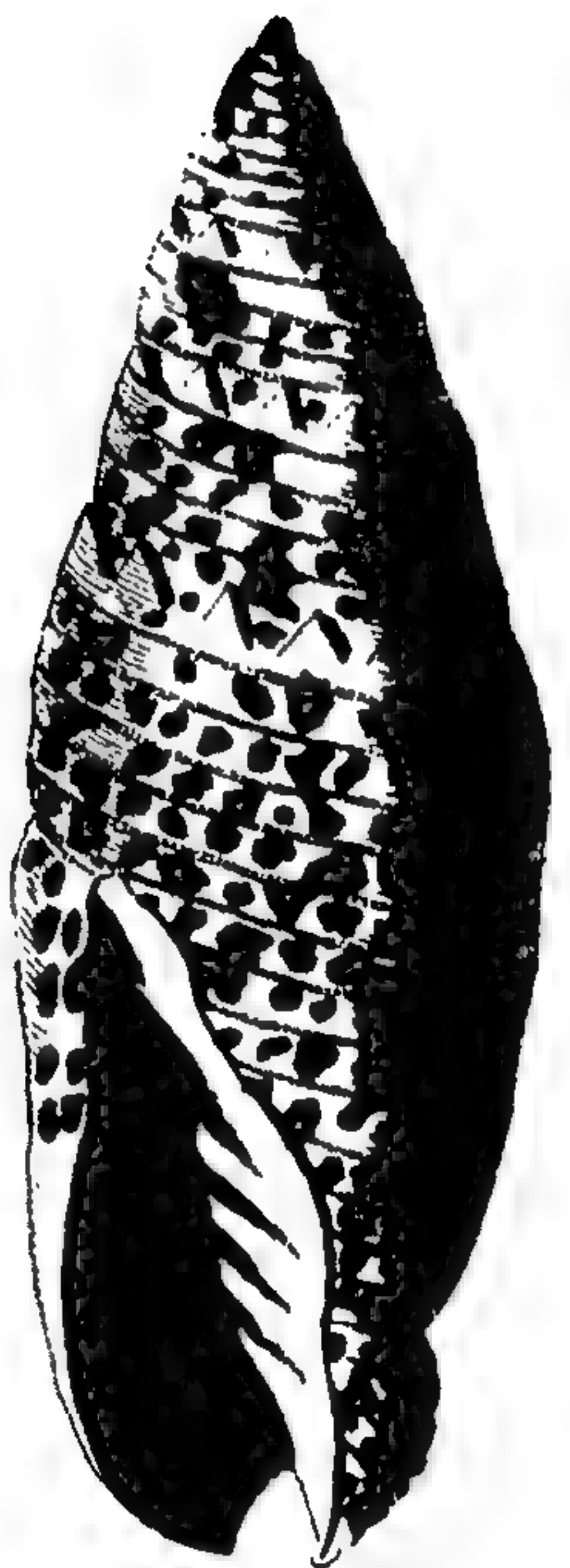
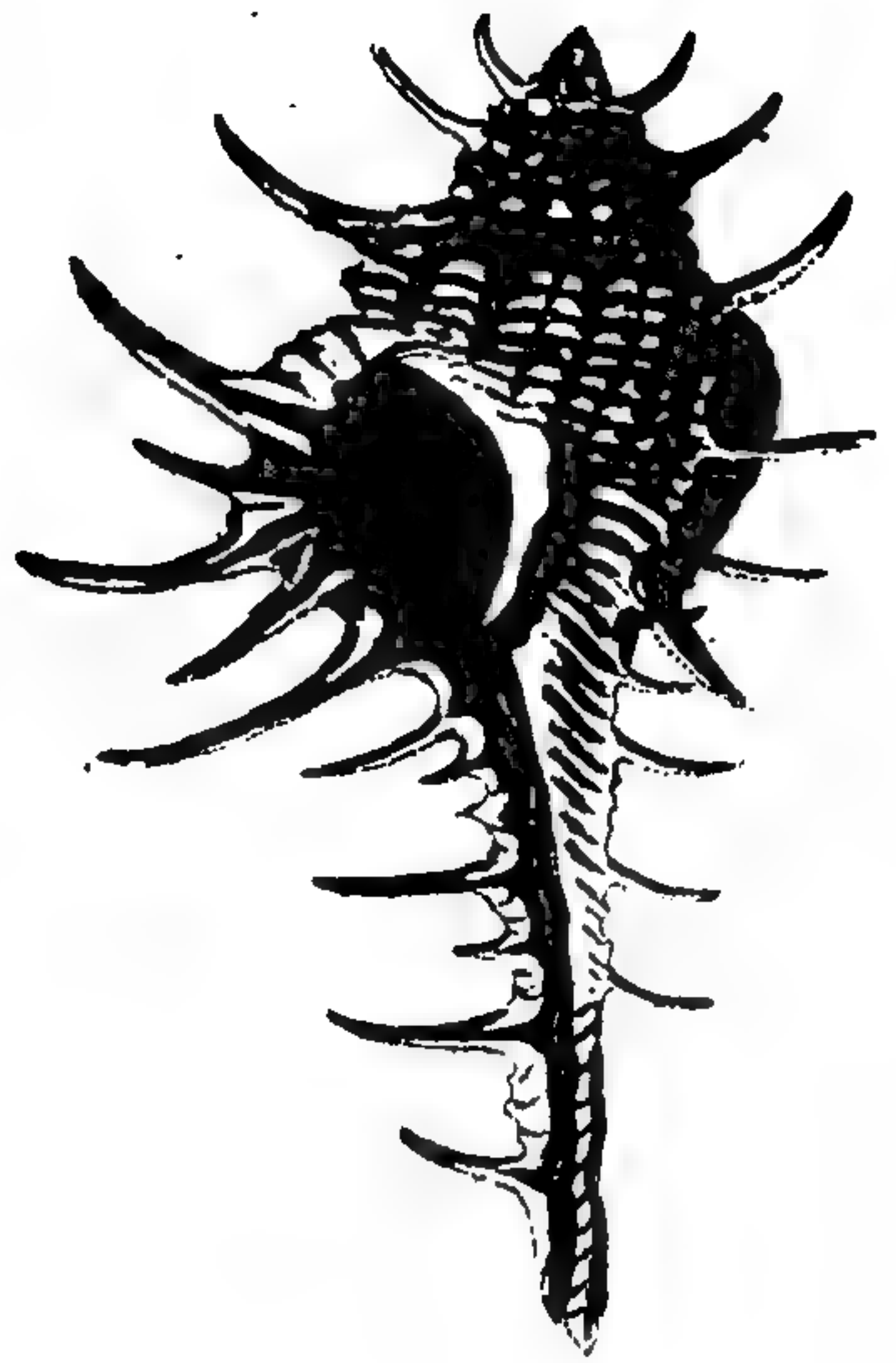
A Buck, the first year, is called a fawn; the second, a pricket; the third, a forel; the fourth, a fore; the fifth, a Buck of the first head; and the sixth, a great Buck. See DEER.

The term Buck is likewise applied to the males of the hare and rabbit kind.

BUDHURS. The Irish name for a large species of trout externally resembling the red gillaroo.

BUFFALO. An animal of the cow-kind, between which and the common ox there is a very striking similitude. They are equally submissive to the yoke, frequently live under the same roof, and are employed in the same domestic services. Their figures are so nearly alike, that it requires some degree of attention to be able to distinguish them; and yet (as Buffon observes) no two animals can be more distinct, or appear to have a stronger aversion to each other: and were there only one of each kind, it is probable that the race of both would soon be extinct. Certain, however, it is, that the antipathy of these two animals is so great, that the cow will not breed with the Buffalo, which it so greatly resembles; though it will with the bison, to which animal it has in shape but a very distant similitude.

BUCCINA OR WHELKS.



BUF

The Buffalo is by no means so beautiful a creature as the cow. Its figure is more clumsy and awkward, its air is more wild, and it carries its head nearer the ground; its limbs are not so fleshy, nor is its tail so well covered with hair. Its body is shorter and thicker; its legs are higher; its head is smaller; its horns are compressed, one side being sharp, and a tuft of hair hanging down between them; its skin is also harder, thicker, blacker, and more destitute of hair; and its flesh, which is hard and blackish, is not only disagreeable to the taste, but also to the smell. The milk of the female, though produced in great abundance, is by no means so good as that of the cow. However, in warm climates, the greatest part of the butter and cheese is made of the milk of the Buffalo. The veal of the Buffalo is scarcely better food than the beef; and, in short, its hide, which is well known for its softness, thickness, and impenetrability, is the most valuable production of that creature.

Buffaloes possess a very considerable degree of strength; and are accordingly employed in agriculture, and in drawing and carrying burdens, being guided by rings thrust through their noses: and it is said that two of them, when yoked together, are capable of drawing more than four strong horses.

From the size of the Buffalo, (in which it is inferior only to the elephant, the rhinoceros, or the hippopotamus) it may naturally be concluded, that it is a native of the warmer climates; and accordingly we find this animal wild in many parts of India, and also tame wherever the natives have occasion for its services. Wild Buffaloes are very formidable animals; sometimes goring travellers to death, and afterwards trampling on and mangling their bodies in a shocking manner: however, they are less to be dreaded in the woods than in the plains; because, from the violence of their pursuit, their large horns are frequently entangled in the branches of trees, so that sufficient time is afforded the traveller to make his escape. There is, indeed, scarcely any other probability of avoiding them: for they are extremely swift; and such excellent swimmers, that they cross the largest rivers with the greatest facility. Like all other animals of the torrid zone, they are very fond of the water; and, even in the midst of their pursuits, frequently plunge into that element, for the purpose of cooling themselves.

The negroes of Guinea, as well as the Indians of Malabar, (in which countries there are vast numbers of Buffaloes) greatly delight in hunting and destroying them. They never attempt to face these animals; but usually climb trees, from whence they shoot at them; nor do they venture to descend till they have effectually dispatched them. However, when tamed, no animals can be more patient and humble, nor go through domestic drudgeries with greater perseverance.

Though Buffaloes are chiefly found in the torrid zone, they are nevertheless bred in several parts of Europe; particularly in Italy, into which country they were introduced during the reign of Agilulf, King of the Lombards, between the years 591 and 616. They are said to be found wild in Apulia; and to be very common, in hot weather, on the sea shore between Manfredonia and Barletta. They grow to an enormous size, being twice the size of our largest oxen; from which circumstance they are by some called taurelephantes.

In the British Museum there is a pair of horns, probably of this kind; one of which is six feet six

BUF

inches and a half long, and its cavity is capable of containing five quarts of water: but Lobo mentions some which were sufficiently capacious to contain near three gallons.

Aristotle describes these animals, with abundant precision, under the appellation of wild oxen, among the arachotæ; notwithstanding which, Be-lon and Buffon affirm, that they were totally unknown to that philosopher.

The female Buffaloes, like cows, produce but one at a time. But they are very different in their periods of gestation: the cow is well known to go but nine months; whereas the Buffalo goes twelve. The Buffalo, indeed, forms a distinct kind, and never mixes with the cow, the bison, or the urus: it manifests a strong aversion to the former; and, when feeding in the same pasture, always keeps apart; and produces a separate race in every quarter of the globe where it is found.

All Buffaloes are extremely fearful of fire; and, perhaps, in consequence, have an aversion to red colours. In general, they are inoffensive animals, if undisturbed; but, when wounded, or even fired at, their fury becomes ungovernable: they then turn up the ground with their fore-feet; bellow more loudly, as well as more terribly, than the bull; and pursue the objects of their resentment with determined fury. It is, however, remarkable, that though their horns are so very formidable, they in general employ their feet more in combat, and endeavour to trample their enemies to death.

There are various species of the Buffalo; but naturalists have so confounded them with the bonafus, bison, and urus, that it is extremely difficult to refer them to their proper classes.

BUFFALO, MUSK. The horns of this species are closely united at their bases, bending inwards and downwards, and turning outwards at their extremities; and are about two feet long, and very sharp at their points. The head and body are wholly covered with very long silky hairs of a dark colour; and the flesh smells strong of musk. This animal is found about Churchill River, in Hudson's Bay, and the river of Seals. It seldom exceeds the deer in height, but is excessively nimble. The breed, however, may be traced in different parts of the continent of America.

A part of this species has likewise been discovered in the north of Asia, near the mouth of the Oby, in a fossil state; but whether the animal is a native of any part of the Asiatic continent, or was only carried thither by chance, has not yet been sufficiently investigated.

BUFFALO, CAPE. The length of this species is eight feet, and its height five and a half; the body is thick, and the limbs clumsy and strong. The horns are large at their bases, bend outwards, and then suddenly turn inwards; their length along the curve is one foot nine inches; and their distance, from tip to tip, is eight inches and a half. The face is covered with long rough black hair; the chin, the under-side of the neck, and the dew-lap, are surrounded with long hanging coarse hair of the same colour; and from the horns, along the top of the neck, to the middle of the back, there is a long loose black mane. The body is covered with short dark cinereous hair; the base of the tail is cinereous, and almost naked; and the rest is covered with long black hair.

Some of these animals grow to a much larger size than that we have described, as is evident from a pair of horns in the Leverian Museum; the length

B U F

length of which, along the curvature, is three feet and upwards; and, between tip and tip, one foot six inches.

These Buffaloes inhabit the interior parts of Africa north of the Cape of Good Hope, but it does not appear that they extend to the north of the tropic. They far exceed the largest English ox in magnitude; their heads hang down; and they have a very fierce and malicious aspect. They lie in ambush in woods, and other secret places; and, rushing suddenly on passengers, trample them, their horses, and oxen of draught, under their feet; so that they are dreaded as some of the most formidable beasts of this country; and they will even return to the attack, and lick the mangled bodies. Their swiftness is prodigious; and they are so strong, that one only three years of age having been placed, for an experiment, with six tame oxen in a waggon, could not be moved from the spot by their united exertions.

This species likewise abounds in the interior parts of Guinea; but they are so fierce and malevolent, that the negroes who pursue other savage animals are fearful of molesting them. The lion, which is able to break the back of the strongest domestic ox at one blow, is unable to master this creature, unless by leaping on its back, and suffocating it by fixing its talons about its nose and mouth. The lion, indeed, often perishes in the attempt, but not without leaving the marks of its fury about the mouth and nose of the Buffalo. The flesh is coarse, but juicy, and has a strong flavour of venison: it is much esteemed in those countries where these animals are found; but it probably derives some share of its relish from the difficulty attending its attainment.

The Cape Buffaloes are gregarious; and generally retire, during the day, into the thickest forests. They are called aurochs by the Dutch settlers; but differ totally from the European Buffaloes, approaching so nearly in species to the last kind, that they may be considered merely as a variety. The warmth of the climate has prevented the vast length and abundance of hair which distinguishes the former; and the luxuriance of the herbage has given them the vast superiority of size.

However, another species of aurochs has been mentioned by the Dutch travellers; who say that it resembles the common ox, but is larger, and of a grey colour; that its head is small, and its horns are short; that the hair on the breast is curled; that it has a beard like a goat; and that it is so swift, that the Namacques call it baas, or the master-courier.

BUFFALO, DWARF. The horns of this species recede in the middle, and almost meet at the points, standing erect. Its body is larger than that of a roebuck, and less than a stag's; it is compact and well-made in all its limbs: the hair is shining, and of a tawny brown; the legs are short; the neck is thick; the shoulders are a little elevated; and the tail is terminated with coarse long hairs.

Belon met with this species at Cairo; but says that it was brought from Azafi, a province of Morocco situated on the ocean.

BUFFALO, LITTLE INDIAN. This animal grows to the size of a calf six months old; and resembles the English bull in shape, except that it has very short horns, and a bunch rising on the back between the shoulders. In the East Indies these Buffaloes are used for drawing coaches, instead of horses. The nose is broad, flat, and destitute of hair; on the lips,

B U G

or muzzle, there are some loose, shaggy, straggling hairs; and the hair on the inside of the nose is whitish. The horns, which are small, and of a dark colour, appear but a little way above the rough hair on the top of the head; the ears are much longer and larger than the horns, being of a flesh colour, and internally destitute of hair; the body is wholly covered with sleek hair; that on the head, neck, tail, back, and sides, being of a blueish colour. The loose skin on the neck is white; and the belly is covered with so small a quantity of lightish hair, that it shews the flesh colour. The legs are of a light colour, spotted and marked with black, and become gradually whiter towards the feet. The tuft of hair at the extremity of the tail is black; and the hoofs, which are shaped like those of the cow, are of a dark brown.

BUFFON BIRD. An African bird to which the French give the title of demoiselle, or lady, on account of its elegant gesticulations; but its proper name is the Numidian crane, though it is best known by the designation we have adopted. It possesses the greatest peculiarity of manners; it stops, rises, lifts one wing, then another, turns round, sails forward, then backward; all which motions afford high diversion to the ignorant, who never consider that these contortions are only the awkward expressions of the animal's fears. This bird is very scarce, even in those countries where it breeds. The plumage is of a leaden grey colour; but it is distinguished by fine white feathers, consisting of long fibres, which fall from the back of the head about four inches long; while the fore-part of the neck is adorned with black plumage, composed of very fine, soft, and long fibres, hanging down on the breast, which give the bird a very graceful appearance.

BUFO. A name frequently applied to express the toad, denominated by others rubeta.

BUG. A very nauseous insect, which intrudes on the retreats of mankind, and is of all others the most troublesome and noxious. When the weary retire to rest, the bug issues from its retreat, and commences its depredations. By day it lurks in the most secret parts of the bed; takes the advantage of every chink and cranny to make a secure lodgement; and contrives its habitation with so much art, that scarcely any industry can detect it. It seems to avoid the light with great cunning; and even if candles be kept burning, it is fearful of issuing from its hiding-place; but no sooner does darkness promise security, than it crawls out from some corner of the bed, and travels with great assiduity to attack its victim, whom it pestlers with unceasing cruelty.

Nor are these animals less disagreeable from their nauseous stench than their voracious appetites. When they begin to crawl, the whole bed is infected with the smell; but if they are accidentally killed, it becomes insupportable. These are some of the inconveniences resulting from the persecution of these odious insects; but, happily for Great Britain, they multiply less in these islands than in any part of the continent. In France and Italy the beds, particularly in the inns, swarm with them; and every piece of furniture seems to afford them a retreat: they also grow to a larger size in those countries than with us, and bite with more severity.

If minutely examined, this animal will be found to consist of three principal parts; the head, the corselet, and the belly. It has two small brown eyes,

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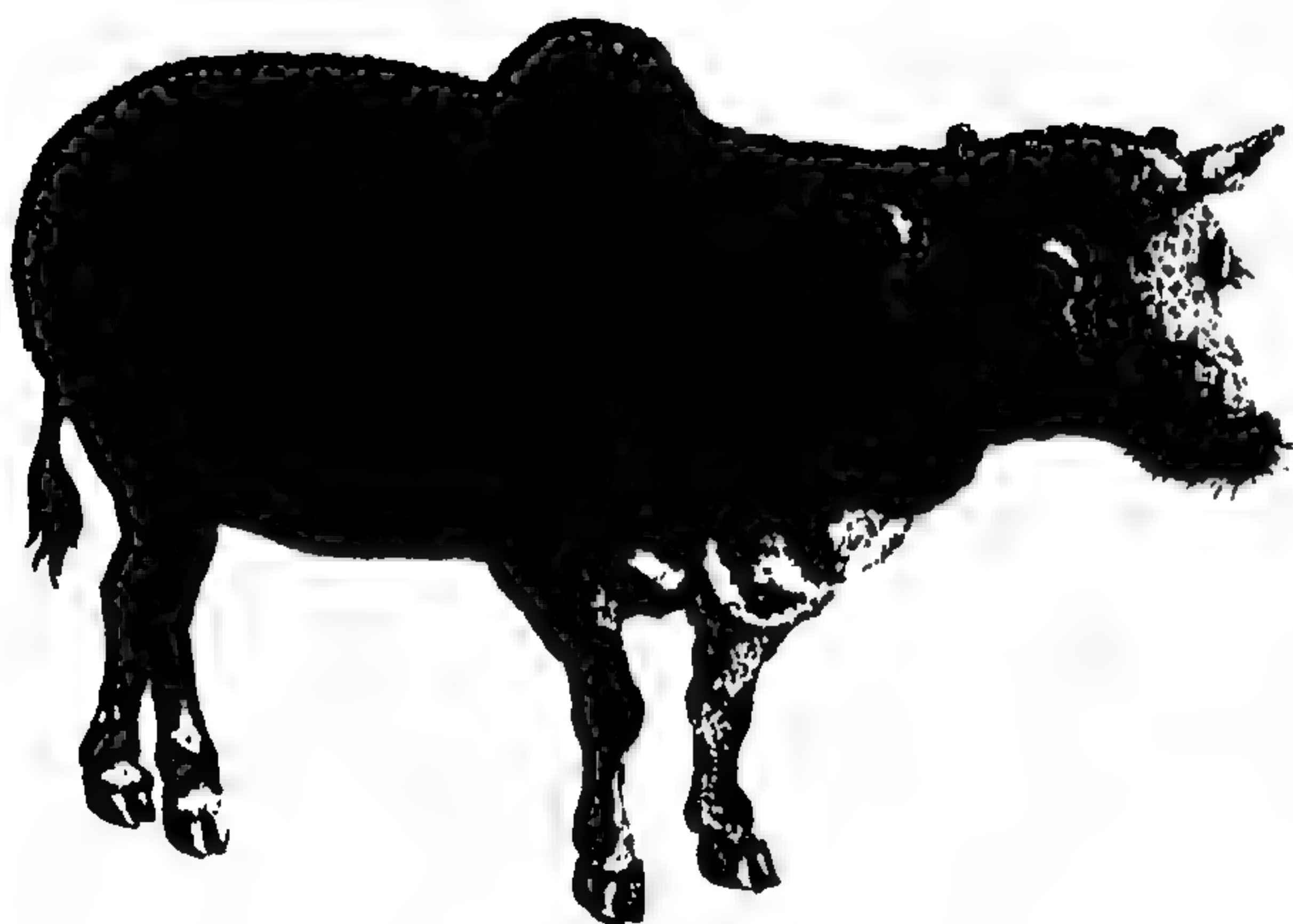
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1. LITTLE INDIAN BUFFALO. 2. MUSK BUFFALO. 3. ASH-COLOURED BUZZARD.
4. COMMON BUZZARD. 5. MOOR BUZZARD.

BUG

eyes, a little prominent; besides two feelers with three joints, underneath which there is a crooked trunk, it's instrument of annoyance, and which, when in motion, lies close upon the breast. The breast is a kind of ring, in which are placed the first pair of legs. The belly consists of nine rings, under which are placed two more pairs of legs; each leg has three joints; and the feet are armed with crooked claws, resembling hooks. The body is smooth, except a few short hairs about the vent, and on the two last rings, which may be seen through a microscope. It's motion is slow and unwieldy; but it's sight is so exquisite, that, the moment it perceives the light, it generally makes good it's retreat, and is seldom caught, though the bed may swarm with the breed.

If internally examined, we shall find the great artery, which in all insects performs the functions of the heart; we shall likewise discover the aperture of the lungs, on the right side and on the left, through which the animal breathes; and we shall find a stomach and intestines running from the mouth to the anus. If the insect has fasted for any considerable time, it's body will contain a mucus like the white of an egg; but, if crushed after a full meal, the human blood which it has drained will appear a little darkened by having passed through it's body.

The parts of generation in these animals are sufficiently obvious; they are often found coupling tail to tail, and in that state are very easily destroyed. The female has an oviary filled with eggs, joined together like a bunch of grapes; each egg being oblong, almost cylindrical, inclining to white, and pretty transparent. In about two days after impregnation by the male, she deposits her eggs, to the number of an hundred and fifty, in some convenient place where they are likely to remain undisturbed: there they continue for some months; during which time, neither heat nor cold, moisture nor fumigation, can in the least retard their exclusion; but they come forth active, and endowed with the noxious qualities of the species. This hardness of the shell seems to continue the breed, which might otherwise be annihilated, as the old ones die every winter, or are easily destroyed by a fumigation used for that purpose: but the eggs seem incapable of destruction; and even those who profess to kill these nauseous insects, though they may answer for the parent, can never make certain of the egg.

The manner of destroying Bugs, notwithstanding the various prescriptions which have been published, and the nostrums which have been applied by individuals, seems rather the effect of assiduity than of antidote. Cleanliness is the most effectual preventative, and that alone will tend to exterminate them. They are, however, of themselves, an effectual antidote against other species of vermin, particularly fleas, which they never fail to destroy.

Linnaeus enumerates about forty species of Bugs, to which he gives the general name of cimex.

BUG, ACOLAN. An insect resembling the common Bug, but less nauseous in it's smell. It is very small, and, when full grown, begins to assume yellow. It is extremely mischievous among cloaths, where it often commits it's depredations unperceived.

BUG, CATERPILLAR. A name given by Bonet to a small species of caterpillar which smells exactly like a Bug. This, however, is not the only

BUG

species which yields a sensible smell; for there is one of the middle-sized, smooth kinds, which, at the time of it's change into the chrysalis state, emits a very pleasant rose-like scent; and their exuviae retain that smell for years together. There is also another which smells strongly of musk.

BUG, GREEN AND YELLOW. This insect is about the size of the common fly. The body is of an oval shape, considerably depressed, and black on the upper part; the feelers are slender, and of a greenish colour; the head, the breast, and the external wings, are of a bright green, but somewhat rough; and the belly is also green. The snout has four joints; within it is a bristly tongue; and a yellow margin, or rim, surrounds the whole. This insect is commonly found in kitchen-gardens.

BUG, NARROW WATER, or BOAT-FLY. This insect is nearly an inch long, and the sixth of an inch broad. The head is blunt and yellow; the eyes are brown; the breast is large, and of a yellow colour, but somewhat transparent; the shield is black, with a gloss like velvet; the external wings are of a yellowish grey, spotted with black round the edges; the interior wings are whitish and transparent; the fore-feet are shorter than those in the middle, and the hinder ones are much longer than either. The snout is long, and sharp-pointed; the feelers are very short, consisting only of two joints; and the belly is black and hairy.

BUG, COMPRESSED WATER, or BOAT-FLY. This species is nearly an inch long, and somewhat broader and more depressed than the former. The head and legs are yellow; the breast and the external wings are brown, with many fine slender transverse streaks of pale yellow; the under part of the body is yellowish; and the eyes are black.

BUG, GREY WATER, or BOAT-FLY. This insect is extremely minute, being less by one half than a common louse, and entirely of a whitish grey colour. The back is depressed, with a line running along the middle; the fore-legs are remarkably short; the feelers are also very short; but the hind-legs are long.

There are several other species of the Water Bug: the most remarkable of which are, the Black Water Bug of the East Indies; the Black and White Smaller Water Bug; the Broader Brown Water Bug; and the Little Yellowish-streaked Water Bug.

BUG, PLANT, or CHERMES. The snout of this animal is placed on it's breast; the hinder part of the belly is pointed; there are four wings on the sides; and the feet are adapted for leaping. Linnaeus has enumerated eight species; namely, those of the elm, maple, beech, alder, fir, willow, ash, and nettle. Besides these, he mentions another, which is supposed to breed in the head of the cerastes, or horned serpent.

BUG, FIR-TREE. This species is of an oblong figure, and of a whitish colour. They have small heads; and pretty large prominent eyes of a brown hue, with a small black speck between them. The feelers are very small; there is a sort of down near the tail; and the wings are thin and whitish. When concealed in the leaves of the fir-tree, they make a prominence resembling a strawberry.

BUG, GRASS. This is a pretty large insect, considering it's kind. The body is a little depressed and broad; the head is very obtruse; the breast is grey, and variegated with white lines; and the feelers are white, except at their tops, where they assume a blackish appearance. This creature pretty much resembles

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resembles a grasshopper, or rather a cricket, except that the wings are not cruciated. Exclusive of these, naturalists notice the Apple-tree Bug, and the Germander Bug; and probably there are particular species belonging to many other trees.

BUG, OBLONG DUNG. Linnaeus describes this Bug as a cimex with a crooked trunk, having feelers like hairs at the ends, and an oblong black body. It feeds on flies, and other insects; and is furnished with six feet, the hindmost of which are very long, clavated, and thick near the claws. It is covered with filth; of which, however, it can easily divest itself, and so change its appearance as to deceive the eye of the spectator. It is shaped somewhat like a spider; and has a hairy furrowed body, of an ash colour, which appears like earth when it is dry. The head and feelers are destitute of hair, except the last joint of the feelers; and the trunk is crooked, and incurvated.

BUG, GREEN STOVE. This insect, which is of a flat oval shape, and a greenish colour, firmly adheres to the bark or leaves of trees. The back is a little prominent; the belly is hollowed, the fore-part being blunt, and the hind forked. So little does it resemble an animal externally, that it was long taken for an excrescence on the plant on which it was found. It appears in a kind of shell, or covering, which incloses the body of the insect. It is furnished with six very slender legs; the eyes are small and black; and the feelers are very slender. This animal possesses the faculty of thrusting out its legs at pleasure, and sometimes moves slowly about; however, it generally adheres to the leaf of the tree, continuing in the same place, and extracting the juice. The male is a small fly; much inferior in size to the female: it has a slender oblong body, and long legs; the feelers are short; and the wings are white. The female is commonly found on orange and lemon-trees preserved in stoves in green-houses; and is probably the same with the coccus of the citron-tree, or the shielded louse of Linnaeus.

BUGEE. A very scarce species of monkey sometimes imported from India, its native country, into England, and publicly exhibited. It is about the size of a beaver, and nearly of the same colour; but its tail and claws prove it to be wholly of the monkey kind.

BUGELUGEY. A large species of lizard, called by Clusius, and some other naturalists, by the indeterminate name of *Iacertus Indicus*. It grows to the enormous length of four feet, and measures nine inches round. The tail is very long, and terminates in an extremely slender point.

BUGLOSSUS. A name often applied to the foal-fish.

BULIN. A species of sea-snail.

BULL. The male of the cow kind. See Cow, Ox.

BULLA. A genus of univalve shells; whose general characters are, that the shell is sub-oval, that the aperture is oblong and smooth, and that one end is a little convoluted.

BULLA, WOOD. This shell is of an oval figure, transversely striated. It is narrower at the one end than the other, and a little umbilicated. The colour is dirty, and resembles some sorts of wood, whence the trivial name. The whole length of the shell is about two inches.

BULLA, OBTUSE. The shell of this species is very brittle, and more obtuse at the end; and the inner side folds over the columella, so as to render it invisible.

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BULLA, CYLINDRIC. This species is white, of a cylindric figure, a little umbilicated at the end, and about twice the size of a grain of wheat.

BULLA, OPEN. One end of this shell is produced, and fusiform; and the aperture is very wide.

The word *Bulla* also signifies a genus of worms of the order of testacea.

BULLCARD. An English name for the *alauda non cristata* of Rondeletius; a small sea-fish caught on the Cornish coasts, and near the Isle of Anglesey; called by Pennant the smooth blenny.

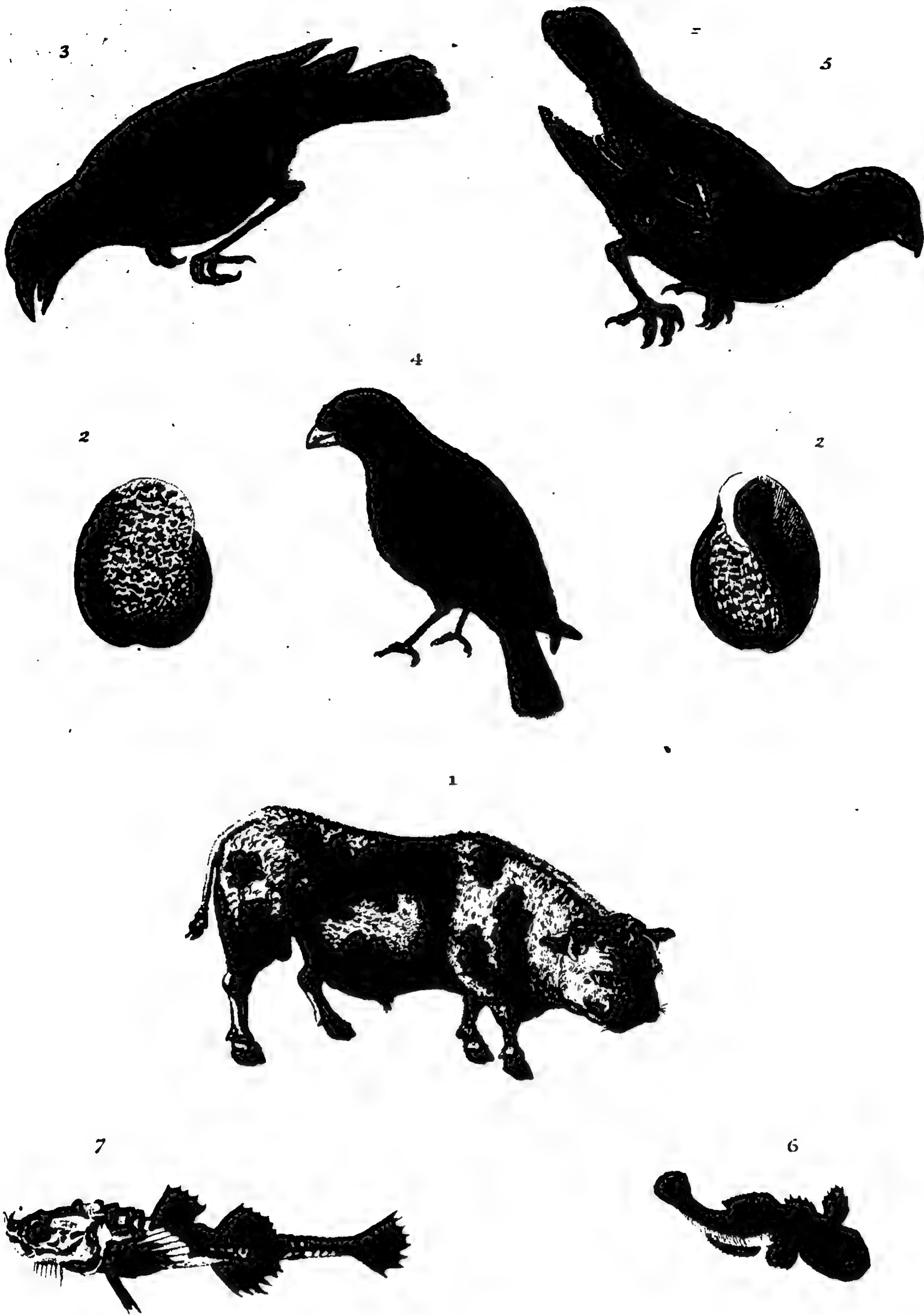
BULL-DOG. One of the most fierce and strong of the canine race, having the nose short, and the under-jaw longer than the upper. The breed is in a manner peculiar to England; but, ever since the savage custom of bull-baiting has happily been on the decline, it has suffered neglect. Such is the strength and ferocity of these animals, that four of them have been known to master a lion; and when they are turned loose on a bull, and have once properly seized him, nothing short of the loss of life, or the giving way of the part, can disengage them. While that barbarous amusement continued in vogue, various instances of savage fortitude have occurred in the feats of this breed, which would scarcely be credited in countries where the diversions are more rational and elegant.

BULL-FINCH. A well-known bird of the sparrow kind, the wild note of which is destitute of melody: but, when tamed, it becomes remarkably docile; and may be taught any tune by means of a pipe, or to whistle any notes in the truest manner, and seldom forgets its acquirements. It soon becomes so very tame, as to attend its master's call, perch on his shoulder, and go through its musical lessons at command. It may even be taught to speak: and some of these birds, thus instructed, are annually imported from Germany.

The Bull-Finch is about the size of a common sparrow: the bill is strong, short, black, and crooked like that of a parrot; the tongue is likewise short; the eyes are of a hazel colour; the head is large in proportion to the body; the breast is crimson, as well as the jaws and the throat; but the top of the head, and the sides of the bill, are of a fine shining black. Part of the neck, the shoulders, and back, are of a blueish ash-colour, shaded with red; and the belly and rump are white. The exterior webs of some of the quill-feathers are red, and the interior of a fine glossy black; others are black with dusky edges, and of a blueish gloss; and some again have their exterior edges white, forming a kind of white transverse bar on each wing. The tail is two inches long, and of a shining black; the legs are of a dusky colour; and the claws are black. The male is distinguished by the superior blackness of his crown, and by the rich crimson which adorns his breast, cheeks, and throat; while those of the female are of a dirty colour. However, they are with difficulty distinguished when young; but, by plucking a few feathers from the breast when the bird is about three weeks old, in ten days time the secret may be discovered; the growing nascent plumage appearing of a fine crimson, if a cock; but of a palish brown, if a hen.

Bull-Finches delight to feed on the buds of fruit-trees, such as the apple, pear, and peach; but as they always select the blowing buds, they are extremely noxious to gardeners; and are accordingly destroyed as often as they can be met with in the act of plundering.

These



1. HIGHLAND BULL. 2. BULL. 3. GREATER BULL-FINCH.
4. LITTLE BROWN BULL-FINCH. 5. NORTH AMERICAN BULL-FINCH.
6. BULL-HEAD. 7. ARMED BULL-HEAD.

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These birds breed very late in the spring, the young ones being seldom hatched before the middle of June. They usually form their nests either in gardens, orchards, parks, or other places which abound with trees; and conceal them with a considerable degree of address. The hen lays four or five eggs, of a blueish colour, and sprinkled at their largest ends with large dark spots of a brown or reddish hue. If the young are intended to be secured, they must not be removed before they are twelve or fourteen days old. They should then be kept very warm and clean, and fed sparingly every two hours from morning till night. Their food must be rape-seed, soaked in clean water eight or ten hours, and then scalded and bruised; after which it should be mixed with an equal quantity of white bread, soaked in water, strained, and afterwards boiled thick with milk. This preparation should be made fresh every day; but when they are able to feed themselves, they must be weaned from their soft meat as soon as possible, and then fed with rape and canary seeds. If they happen to be indisposed, a blade of saffron should be put into their water; and, while young, they should be accustomed to the sound of such notes as they are intended to learn, which they will readily acquire.

BULL-FINCH, BRAZILIAN. This species is about the size of the lark, and has a straight bill. The whole head, the throat, and the lower and middle part of the neck, are of a fine blood-colour; the back is grey, mixed with black feathers; the upper part of the bill is brown, the lower being of a light carnation; the legs are cinereous; the wings and tail are a mixture of black and grey; and the eyes have blueish pupils.

BULL-FINCH, GREATER, OF EDWARDS. The bill of this species, which seems to be a native of some part of America, is pretty thick towards the base, slightly arched on the upper part, terminating in a point, and entirely of a whitish colour. The top and sides of the head, the upper part of the neck, the back, the wings, and the tail, are of a dark brown colour inclining to black, the feathers being edged with a lighter brown, which forms a very agreeable mixture. The throat, the under side of the neck, the breast, and the belly, are of a very fine scarlet colour; the superior parts of the wings, and a little way down their ridges, are of the same colour as the breast; the insides of the wings are dusky; the thighs, the lower belly, and the covert-feathers under the tail, are of a black brown colour; the tail is pretty short in proportion to the size of the bird; the legs, the feet, and the claws, are of a light brown; and there are four toes on each foot.

BULL-FINCH, LITTLE BROWN. This curious little bird has a white bill. The top and sides of the head, the upper part of the neck, the back, the wings, and the tail, are of a dark brown colour; the borders of the feathers are somewhat lighter than their centres; the insides of the wings are of a light brown; the throat, the under side of the neck, the breast, the belly, the thighs, and the covert-feathers under the tail, are of a dull reddish orange; and the legs, the feet, and the claws, are of a dull brown.

BULL-FINCH, NORTH AMERICAN, THE GREAT-EST OF EDWARDS. This beautiful bird is seven inches long. The shape of the bill, and the colour of the breast, are like those of the common Bull-Finch; the upper chap is black, arched, and

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somewhat longer than the lower; and the lower is of a reddish flesh-colour, except the point, which is black. The head, the throat, the breast, and the rump, are scarlet; and from the nostrils to the eyes on each side there runs a blackish line. The feathers on the hinder part of the neck and back are black, tipped with scarlet; the wings are black; the greater quill-feathers next the back are tipped and bordered with white, forming two oblique white bars across each wing; the lesser coverts of the wings are a little fringed with red; the belly and thighs are of a light ash-colour; the tail is black above, but inclining to cinereous beneath; and the legs are of a blackish brown.

BULL-FROG. This very singular animal is a native of Carolina, and derives its name from its bellowing exactly like a bull, which excites the admiration of strangers. Catesby informs us, that it is of a deep brown colour, having a great number of dark spots mixed with others of a greenish red; and that it grows to a very large size. The eyes are brown; the irides are yellow; and under the eyes there are two round ears covered with thin membranes.

BULL-HEAD, or MILLER'S THUMB. This fish is only four or five inches long. The head is of a roundish shape, large, broad, and depressed; and the gill-fins are round, and beautifully notched at their circumference. At the rise of the covert of the gills on each side there is a crooked prickle. The mouth is large, and full of small teeth; the back is yellow, with three or four black stripes; the belly is whitish; and the body is destitute of scales. The haunts of this fish are in clear and gravelly brooks and rivers, under stones, or in holes. It bites at a small red worm all the summer season; and is so remarkably stupid, that whatever number may be together, the most inexperienced angler may catch them all. When young, it forms a desirable bait for trout. The spawning-time is in April.

BULL-HEAD, ARMED. This fish, to which some naturalists give the name of the pogge, is very common on the British coasts. It seldom exceeds five inches and a half in length, and but rarely attains to that size. The head is large, bony, and very rugged; the extremity of the nose is armed with four short upright spines; and on the throat there appear a number of short white beards. The teeth are very minute; the body is octagonal, and covered with a number of strong bony crusts, divided into several compartments, the ends of which project into sharp points, and form several echinated lines along the back and sides. The first dorsal fin consists of six spiny rays; the second, which consists of seven soft ones, is placed just behind the first; and the pectoral fins, which are broad and rounded, are composed of fifteen rays.

BULL-TROUT, called also the Sea-Trout. This species, like the salmon, migrates up several of the British rivers, spawns, and then revisits the sea. The body, which is thicker than that of the common Trout, weighs upwards of three pounds; the irides are silvery; the head is thick, smooth, and dusky, with a gloss of blue and green; the back is plain, and of the same colour, but becomes more faint towards the side line; and the sides, as far as the lateral line, are marked with large, distinct, irregular black spots: the lateral line is straight; the sides beneath the line, and the belly, are white; and the tail is broad, and even at the end.

end. The dorsal fin consists of twelve rays, the pectoral of fourteen, the ventral of nine, and the anal of ten. The flesh assumes a pale red colour when boiled, but is extremely well flavoured. This fish seems to be the scurff of Willughby.

BUNSING, or STINK-BUNSING. An animal peculiar to the Cape of Good Hope, which the Dutch affirm to be the most nauseous in nature. It is of the size of a middling dog, and resembles a ferret in shape. When closely pursued either by men or beasts, it suffers them to approach pretty near, and then discharges such an intolerable stench from it's posteriors, that it almost overpowers those who cannot immediately get beyond it's effect: and dogs, or other animals, when in pursuit of the Bunsing, are so affected with it, that they instantly turn aside, and rub their noses against the stumps of trees, or any thing else which is likely to destroy the smell.

The Dutch sometimes kill these animals; but suffer them to remain on the spot where they fall, because no person can endure to carry them off. When any of their filth happens to daub a person's cloaths, or is even touched with the point of the finger, the smell is with the utmost difficulty removed, though every expedient be used for that purpose.

The name of this animal, in English, signifies a stinking badger. Pere Xuchelli mentions a species of this creature that is found in Brazil, and which possesses the same nauseous qualities, though in an inferior degree.

BUNTING. The English name of the *emberiza alba*, called by some naturalists *calandra*, *centramus*, *alaudæ* congener, and *strozzello*, or *stillozzo*. The general characters of the family are, that the bill is strong and conic, the sides of each mandible bending inwards; and in the roof of the upper one there is a hard knob, with which nature has furnished these animals for the purpose of breaking and comminuting hard seeds, or other substances.

BUNTING, COMMON. This bird is a constant inhabitant of Great Britain; and, towards the approach of winter, associates in flocks. It's bill is singularly constructed: the sides of the upper mandible form a sharp angle, bending inwards towards the lower; and in the roof of the former there is a hard knob, for the purpose of bruising it's food. The throat, breast, sides, and belly, are of a yellowish white; the head, and the upper part of the body, are of a pale brown, tinged with olive; each of which, except the belly, are marked with oblong black spots; but, towards the rump, these spots become more faint. The quill-feathers are dusky, their exterior edges being of a pale yellow; the tail is a little forked, of a dusky hue, and edged with white; and the legs are of a pale yellow.

BUNTING, YELLOW. The bill of this species is of a dusky hue; the crown of the head is of a pleasant pale yellow, in some almost plain, and in others spotted with brown; the hind part of the neck is tinged with green; the chin and throat are yellow; the breast is marked with orange red; the belly is yellow; the lesser coverts of the wings are green, the others being dusky, and edged with rust-colour; the back is of the same colours; the rump is of a rusty red; the quill-feathers are dusky, their exterior sides being edged with yellowish green; the tail is a little forked; the middle feathers are brown, the two middle-

most being edged on both sides with green, but the others on their exterior edges only.

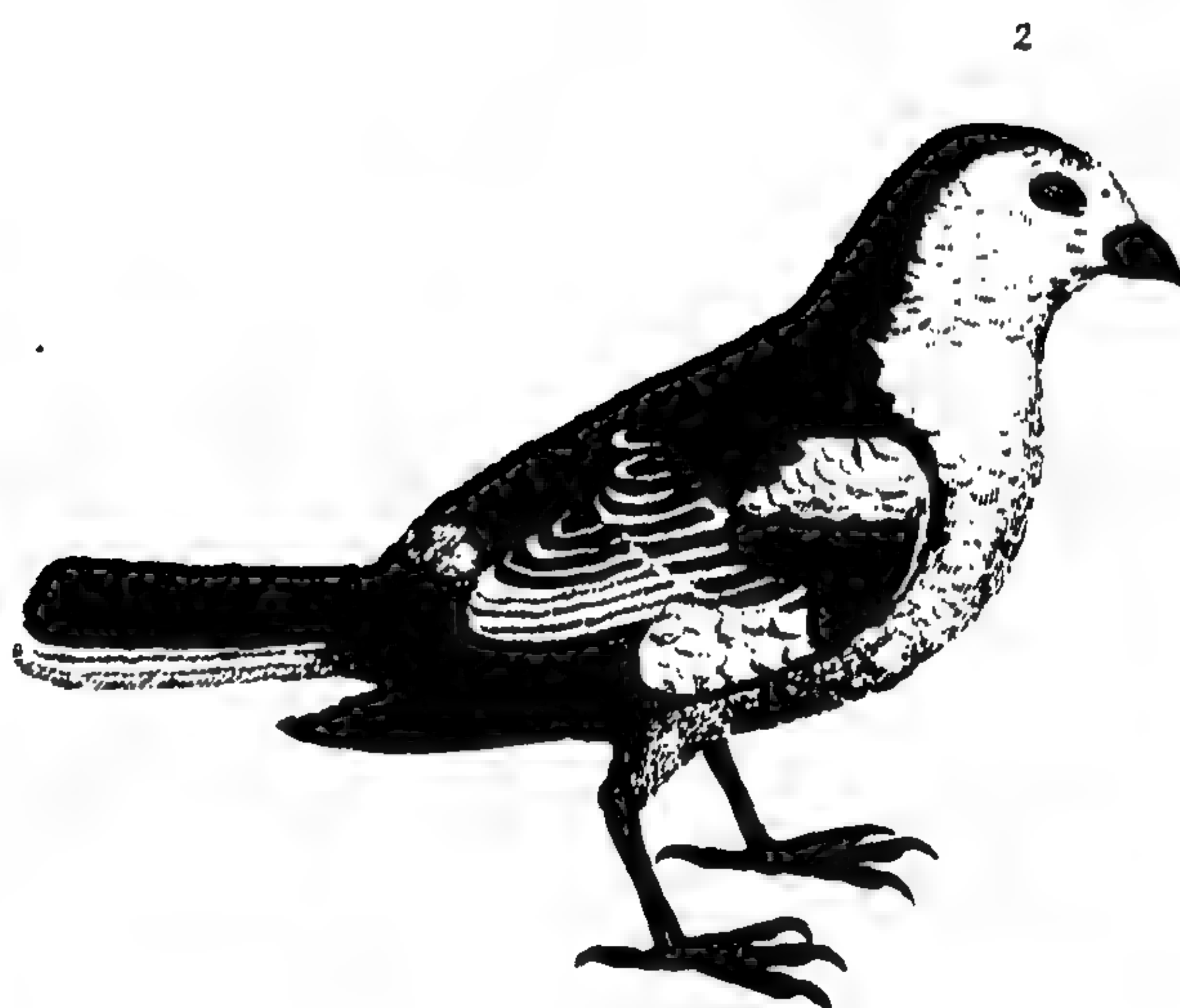
The female of this species builds a large flat nest on the ground with moss, dried roots, and horse-hair, interwoven; and lays six eggs of a white colour, veined with a dark purple. It is one of our most common birds; and in winter frequents farm-yards with other small birds.

BUNTINO, REED. This bird shews a predilection for marshy places, and lodges commonly among reeds, from whence it receives it's name. It's nest is contrived with wonderful art, being fastened to four reeds, and suspended by them about three feet above the surface of the water: the cavity of the nest is deep, but narrow; and the materials of which it is constructed consist of rushes, bents, and hairs. It lays four or five eggs, of a blueish white, marked with irregular purplish veins, especially on their larger ends. It is much admired for it's song; and, like the nightingale, cheers the night with it's melody.

The head, chin, and throat, of the male Reed Bunting, are black; the tongue is livid; and at each corner of the mouth there is a white ring, which encircles the head. At the approach of winter the head changes to hoary; but, on the return of spring, it resumes it's former jettyness. The under side of the body is wholly white; the back, the coverts of the wings, and the scapular feathers, are black, deeply bordered with red; the two middle feathers of the tail are of the same colours; the three next are black; and the exterior web, and part of the interior of the outmost feathers, are white.

The head of the female is rust-coloured, spotted with black: it is destitute of the white ring round the neck; but, in other respects, it resembles the male.

BUNTING, TAWNY. This species is found in different parts of England, but is not very common. Their breeding-place seems yet to be unknown; and, from the circumstance of their sometimes appearing white, are frequently mistaken for white larks. The length of this bird is about six inches and a half, and the breadth twelve inches and upwards. The bill is very short, and yellow, except at the point, which is black. The crown of the head is of a tawny colour; the whole neck is a paler shade of the same colour; the throat is almost white; the upper part of the breast is of a dull yellow; the breast, and entire under-part of the body, are white, dashed with a yellowish tinge; the back and scapular feathers are black, edged with a pale reddish brown; and the rump and covert-feathers of the tail are white on their lower half, and yellow on their upper. The tail is a little forked, and composed of twelve feathers; the three exterior feathers are white; the outmost is marked with a dusky spot on the exterior side; the third is marked with the same colour on both sides of the tip; and the rest of the tail is entirely dusky. The wings, when closed, reach to about the middle of the tail; the colour of the first six quill-feathers is dusky, slightly tipped with a reddish white; their lower parts on both sides are white; and in the seven succeeding feathers the dusky colour gradually gives place to the white, which, in the seventh, occupies the whole feather; the two next are wholly white; the rest of the quill-feathers and the scapulars are black, edged with a pale red; the bastard wing, and the outmost secondary feathers, are of the same colour with the quill-feathers; and the rest, together with the coverts, are entirely white, forming one large bed. The legs, feet,



1. GREEN-HEADED BUNTING. 2. SNOW BUNTING. 3. BLACK AND WHITE BUTCHER-BIRD. 4. INDIAN FORK-TAILED BUTCHER-BIRD. 5. LEAST BUTCHER-BIRD. 6. RED-CRESTED BUTCHER-BIRD.

feet, and claws, are black; and the hind toes are extremely long, like those of the lark, but by no means so straight.

BUNTING, SNOW. In Scotland this species obtains the name of the snow-flake, from their appearance in severe weather, and deep snows. They arrive about that season among the Cheviot Hills, and in the Highlands, in prodigious flocks. A few breed in the latter on the summits of the highest hills, in the same places with the ptarmigans; but the greatest numbers migrate from the remotest north. They appear in the Shetland and Orkney islands; and multitudes of them, being wearied with the length of their voyage, often fall on vessels in the Pentland Frith. Their arrival is a certain indication of approaching bad weather and storms of snow, being driven by the cold from their usual retreats. Their progress southward is probably from Spitzbergen and Greenland, Hudson's Bay, Lapland, Scandinavia, Iceland, the Faro Isles, Shetland, Orkney, Scotland, and the Cheviot Hills. At that season they visit all parts of the northern hemisphere, Prussia, Austria, and Siberia. In Austria they are caught and fed with millet; and, like the ortolan, grow excessively fat. In their flight, they keep very close to each other, mingle together in a very confused manner, and fling themselves collectively into a globular form; and then the fowler makes prodigious havoc among them.

This bird weighs no more than an ounce and a half. The bill and legs are black; the forehead and crown are white, with some mixture of black on the hind part of the head; the back is of a full black; the rump is white; the quill-feathers are black, with white bases; and the secondaries are white, with black spots on their interior webs. The inner feathers of the tail are black, the three exterior ones being white, with dusky spots near their ends; and from the chin to the tail is of a delicate white.

BUNTING, MOUNTAIN. This bird is seldom seen in this kingdom; but, according to Johnson, the bill is short, thick, strong, and black at the point, but the rest of it is yellow. The forehead is of a dark chestnut colour; the hind part of the head, and the cheeks, are lighter; the hind part of the neck and the back are cinereous, the latter being spotted with black; the throat is white; and the breast and belly are waved with flame-colour, but grey at the insertion of the wings. The five first feathers are of a blackish brown, the rest being white, with the tips of each dashed with brown. The three exterior feathers of the tail are white, and the rest of a dark brown; the feet are black; and the hind claw is as long again as any of the rest. The breast of the female is of a darker colour than that of the male. This species has sometimes been seen in Yorkshire and Northamptonshire.

BUNTING, GREEN-HEADED. This is a very curious and scarce bird. The bill is brown; the head and neck are of a dull green; the wings, breast, and belly, are a deep brown; the coverts of the wings and the back are a light brown intermixed with black feathers; the tail is brown; and the legs are of a yellowish hue. The breeding-place of this bird is entirely unknown.

BUPHAGA. A genus of the order of picæ, of which one species is found in Senegal.

BUPRESTES. A species of cantharides, which is of an oblong figure, emits a nauseous smell, and bites very severely. It is of the same nature with the common cantharides, or Spanish

fly; and is said to be very noxious to those cattle which, in feeding, happen to swallow it.

In the Linnæan system, they form a genus of insects different from the cantharides; but belonging to the same order of coleoptera, and comprehending several species.

BURACO DE VELTA. The name of a fish caught on the Brazilian shores, usually known among authors by its local name guaibicoara.

BURBARUS. A name given by some ichthyologists to the common carp.

BURBOT. This fish, to which Ray gives the name of *mustela fluviatilis nostratibus*, bears some resemblance to the eel in its body, except that it is shorter and thicker. Its motions also resemble those of the eel; and it is extremely smooth, slimy, and slippery. The head is flat and disagreeable, and shaped like that of a toad; the teeth are very small, but numerous; and the irides are yellow. On the tip of the nose there are two small beards; on the chin there appears another; and the number of branchiostegious rays is seven. The first dorsal fin is short, and the second is placed immediately behind it, extending almost to the tail; the pectoral fins are rounded; the ventral fins consist of six rays; the vent is situated near the centre of the belly; the anal fin reaches almost to the tail; and the tail is rounded at its extremity. The colour of the Burbot varies; some being dusky, and others of a dirty green spotted with black, and often with yellow; the belly, in some, is white, but the real colour is frequently concealed by the slime.

This fish is found in several of the English rivers, and is esteemed very delicate food, though extremely disgusting when alive. It is a very voracious creature, and preys on the fry and smaller fish. In the Lake of Geneva the Burbot is caught in great abundance, and is there called the *lota*. In foreign countries it sometimes weighs six pounds; but in this it seldom exceeds two or three.

BURBOT, THREE-BANDED. This species frequents the rocky shores of the British isles, and is sometimes caught with a bait. It grows to the length of a foot and a half, and weighs upwards of two pounds. The head is large and flat; the eyes are placed near the end of the nose; the body is long, slender, and compressed sideways, especially towards the tail; and at the end of the upper jaw there are two beards, and one on the chin. The teeth, which are numerous and minute, are disposed along the jaws in the shape of a broad plate; and in the roof of the mouth there is a set of small teeth arranged in a triangular form. There are seven branchiostegious rays: the first dorsal fin is lodged deep in a sulcus just beyond the head, and consists of a number of short unconnected rays; and the second rises exactly behind it, and extends nearly to the tail. The pectoral fins are broad and round; the ventral fins are small; the second ray is the longest; the anal fin reaches almost to the tail; and the tail itself is rounded at the extremity. The scales are very small; the body and head are of a reddish yellow colour, marked above the lateral line with large black spots; the back fin and tail are somewhat darker; and the ventral fin is of a brighter red; but all are maculated. The lateral line has a central incurvation, and then proceeds straight to the tail.

BURBOT, FIVE-BEARDED. The ingenious Willughby makes this species only a variety of the former; but succeeding naturalists having ex-

examined several specimens, determine them to be distinct, as the spotted Burbot has never more than three beards, and the brown never less than five. There is also some difference in the form, as well as the colour, this species being thicker in proportion than the former: however, except in these particulars, and the number of the beards, there is a general coincidence in the parts of both. Four of these beards are placed on the upper-jaw, two at the very extremity of the nose, and two a little above them; and on the end of the lower-jaw there is a fifth.

These Burbots are of a deep olive-brown, with whitish bellies; and they grow to nearly the same size as the former. It is said that the Cornish fishermen, when desirous of taking these fish, whistle, and make use of the words Bod Bod Vean, as if by that means to facilitate their capture. However whimsical this circumstance may appear, it is certain that the fishermen of other countries make use of some magical terms, as they apprehend, to allure their prey.

BURGAU. A large species of sea-snail, of the lunar or round-mouthed kind. It is very beautifully lined with a coat of the nature of mother-of-pearl, which artificers take out, and use under the name of mother-of-pearl; though some call it burgaudine, from the name of the shell from which it is taken.

BURGER-MASTER. A sea-fowl which has a crooked, yellow, narrow, thick bill, the under mandible being somewhat knobbed at the point. The nostrils are longish; there is a red circle round the eyes; the legs and claws are of a greyish colour, the latter being only three in number; and the former are very little shorter than those of the stork, though the body is almost as large. The tail is broad, and expanded like a fan when in the act of flying. The wings and back are of a purplish colour; but the tips of the wings, and the entire body, are white. It builds its nest very high in the cliffs, or rocks; and is commonly seen on dead whales, feeding on the fat of these animals, where it is easily shot. It likewise preys on lambs, seizing them after the manner of a hawk. Its cry resembles that of a raven. It is a solitary bird; and delights in resting on the water, but does not appear to dive much.

BURN-COW, or BURST-COW. A genus of insects with filiform feelers, having the head half concealed within the breast, and being of a roundish figure.

BURN-COW, YELLOWISH GREEN. This insect is placed by some naturalists among the cantharides, except that it has a more oblong body. The cases of the wings are of a yellowish green, or rather gold colour; the legs are long and thickish; the eyes are globous and prominent; and from the forehead proceed two oblong antennæ, which are articulated. The head is small; the mouth is wide, hard, strong, and forked, being armed with teeth, which it uses with great address; the belly is of a longish figure; and the entire insect is about half an inch long. It will fight with beetles and efts, and wound them in the belly. It feeds on moss and heath, as well as on those weak insects which it vanquishes in fight.

Bellonius says that the Yellowish Green Burn-Cow is a winged insect, having a most offensive smell; that it resembles a cantharides, but is larger; and that it is so extremely venomous, that black cattle which feed in pastures where it abounds, are frequently killed by them.

There is another Burn-Cow, with a shorter body, a broader belly, a sharper bill, a small head with prominent eyes, and a wide forked mouth. The cases of the wings are streaked lengthways, and the colour is a grass-green, with a mixture of shining gold. It has eight legs, of a blackish colour, long in proportion to the body, and more slender than in the former species. The antennæ are smaller and more slender; and the smell is infinitely more disagreeable. It lives on flies and palmer-worms; is very injurious to cattle; and some affirm that, when taken internally, its poisonous qualities prove mortal.

In Germany there are two other species; the one of a greenish gold colour, and the other of a yellowish black. The first resembles the yellowish green Burn-Cow, but is somewhat bigger; the cases of the wings are streaked with lines of a deep gold colour, shaded with a little green; and between the lines hollowish tubercles arise, which appear as if engraved. The yellowish black Burn-Cow has the same qualities with the former, except that it is of a different colour, a little bigger, and furnished with four antennæ.

BURN-COW, BROWNISH BRASSY. This species is small; the eyes are very large and prominent; the feelers are short; and the breast is broad, short, hollowed, and slightly marginated. The cases of the wings are very bright and glossy, and finely streaked with very elegant minute specks; the legs are slender and black, as well as the under part of the body; and the snout is prominent. It is commonly found among reeds.

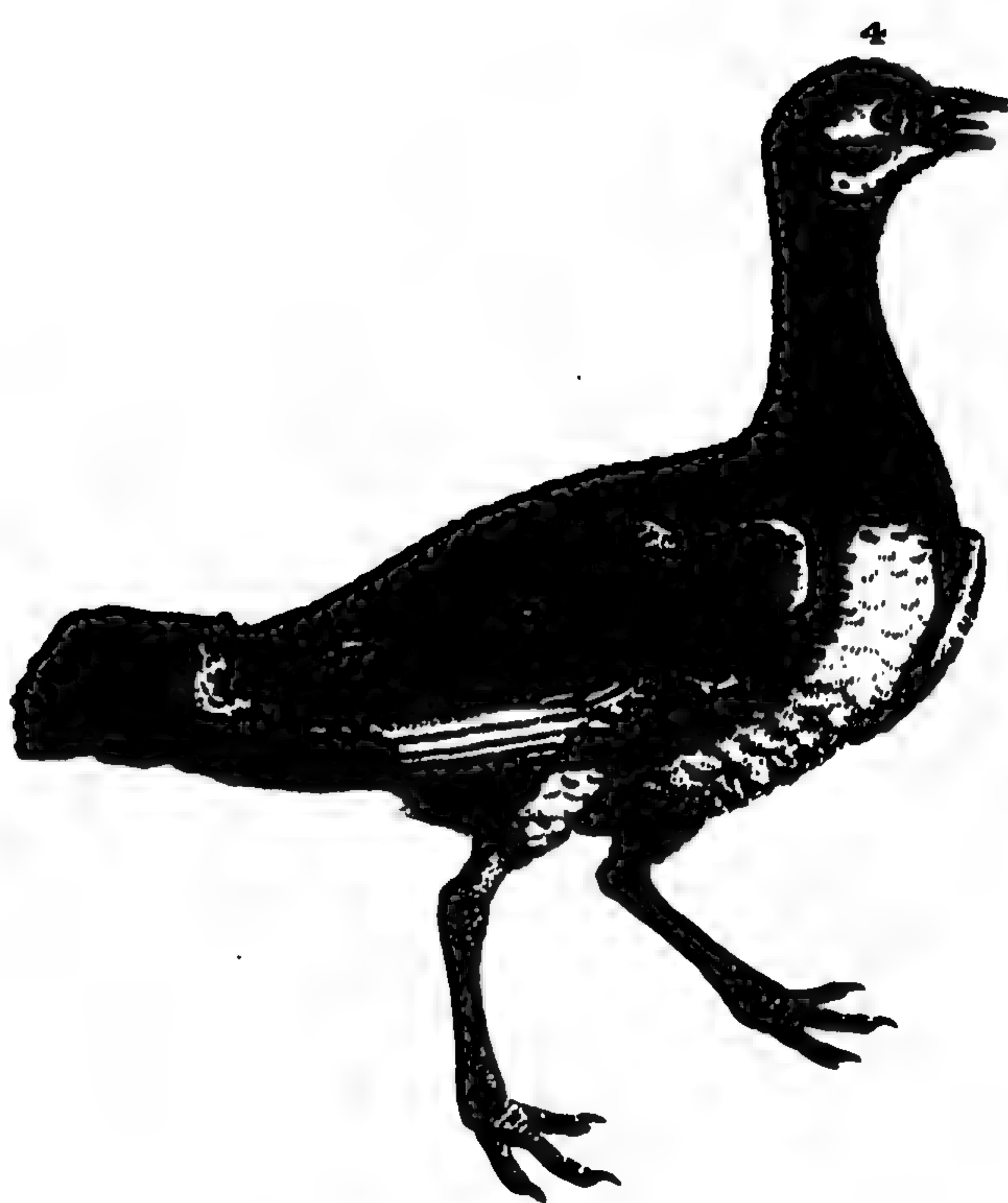
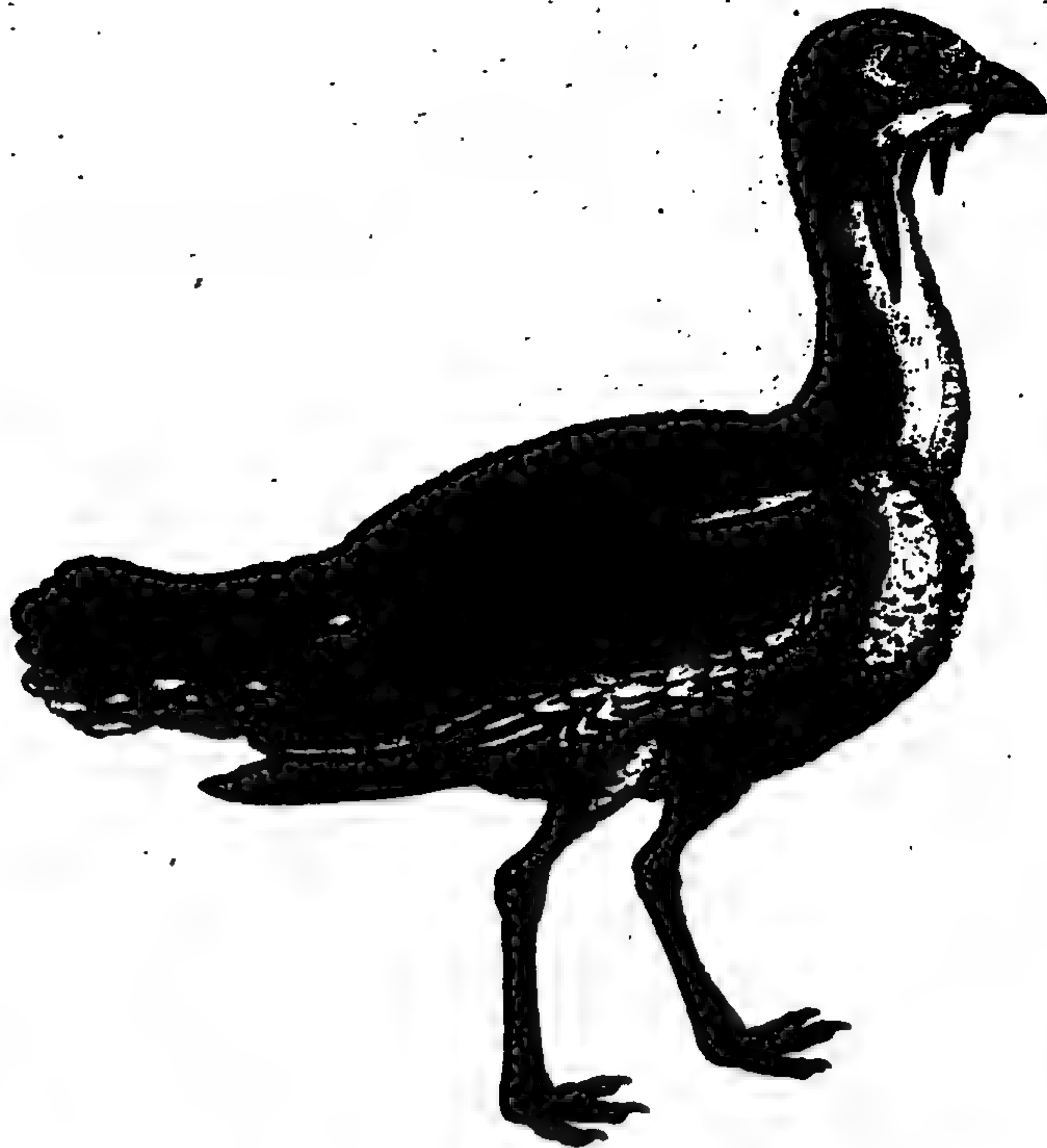
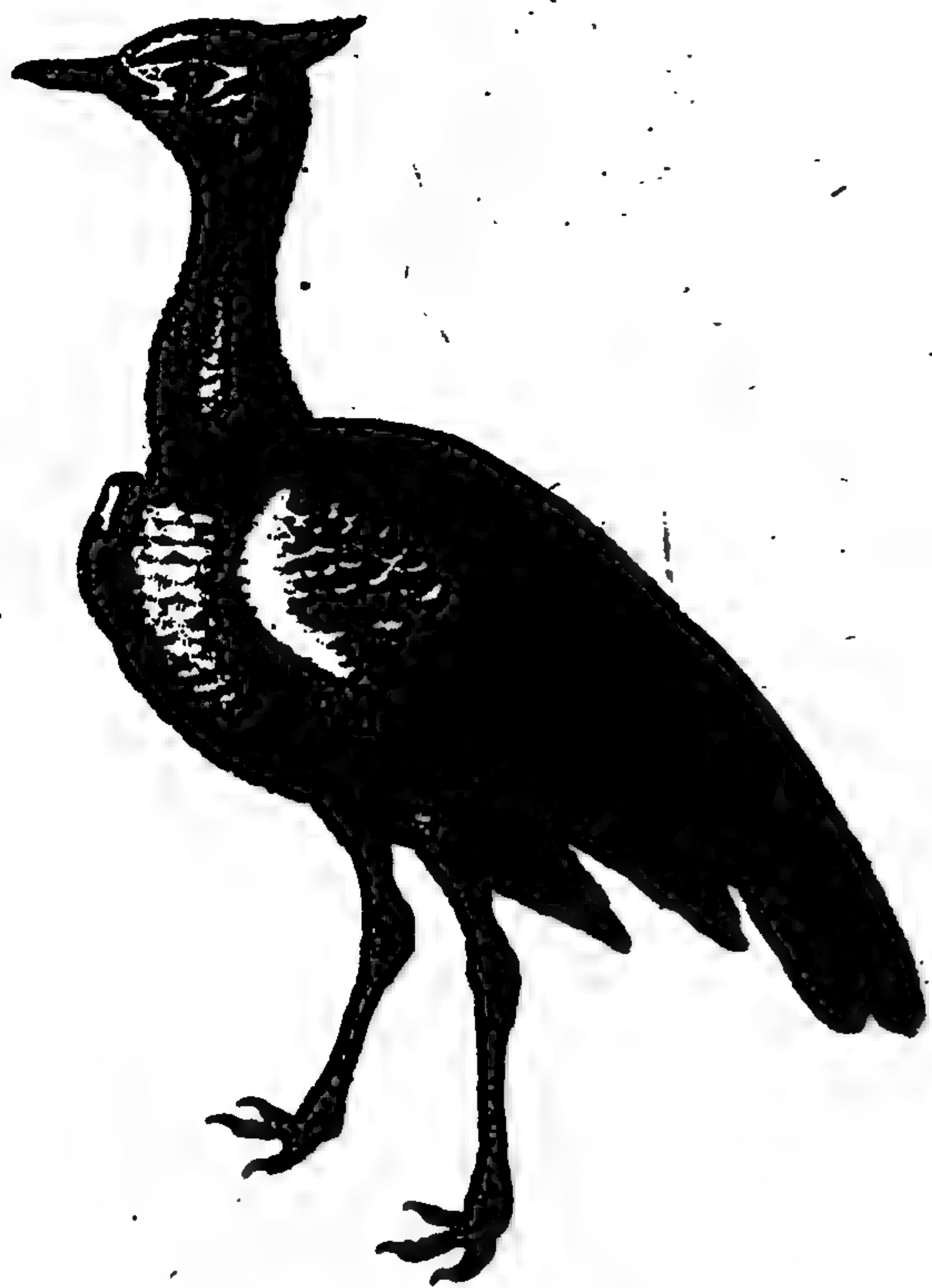
BURN-COW, BRASSY AND CLOUDED, with clavated feelers. This species is scarcely larger than a flea. The belly, and the lowest part of the body, are black; but the upper part is entirely of a brassy yellow, with an admixture of brown; and it has a brown spot on the back which touches both the cases of the wings. The breast is large, and marked with five oblique furrows; the head is almost hid under the breast; and the body grows narrower towards the tail. It does not appear that these two last species are dangerous to cattle.

BURN-COW, VIRGINIAN. This insect is of a dusky, brassy colour, with spots on the wings; and is a pretty large species. The head is almost concealed under the breast; the breast is of a brassy colour, with a mixture of reddish brown; the cases of the wings are also of the same colour, but more slightly tinged with red; they are marked with four or five streaks; and on each there are two bright yellow spots, so disposed as to form a square figure when the cases are closed.

BURREL-FLY. This insect has an oblong body, divided into three principal parts; namely, the head, the shoulders, and the belly; which tail has five or six annulations. It is entirely of a whitish colour, inclining to grey; and has a strong, brawny, long snout. In July and August it proves very troublesome to cattle. Mousset gives an account of a horse which, having been tied by a halter to a tree in a wood, was killed in the space of six hours by those voracious insects, which sucked up its blood with great avidity.

Linnaeus gives the name of tabanus to this species of flies; of which he mentions two varieties, the common tabanus, and the dim-sighted tabanus.

Ray mentions one which he calls the beautiful two-winged fly, with large white spots on the wings. It is of the size of the common house-fly; and has a brown head, breast, and body, except that there is a yellowish tincture under the roots of the wings.



1. ARABIAN BUSTARD. 2. COMMON BUSTARD.

3. INDIAN BUSTARD. 4. LITTLE BUSTARD.

wings. The eyes are large, and of a bright lucid green, with a few black specks.

Other authors mention the black tabanus variegated with yellow, and having brown legs; the brown tabanus, with iron-grey sides, and three brown streaks over the eyes; the grey tabanus, with a transverse line over the eyes; the brown tabanus, with grey wings variegated with small white spots, green eyes; and four brown lines running across them; the long-bodied tabanus; the tabanus with a short body and transparent wings; and the black tabanus with transparent wings.

BURROUGH DUCK. A common English appellation for the tadorna.

BUSELAPHUS. An animal of the goat-kind, called also moschelaphus. It is of an intermediate shape between the stag and the ox kind. The head and ears are long; the legs and feet are small; the tail is about a foot long, and shaped like that of a heifer; the hair of the whole body is of a tawney, or reddish yellow colour; and the horns are black, smooth at the tops, but rounded in every other part. It is extremely tame, docile, gentle, fond of play, and swift of foot; and, except in size, resembles the common antelope.

BUSTARD, OTIS. A large bird which, in the Linnæan system, makes a distinct genus of birds of the order of grallæ; the distinguishing characters of which are, that the feet have only three toes each, and those all placed before; that the upper mandible of the bill is arched; that the nostrils are ovated; and that the tongue is bifid.

The Bustard is the largest land-bird that is a native of Britain. It is much larger than the turkey; the male, at a medium, weighing twenty-five pounds. Its breadth is about nine feet, and its length almost four. The male has a tuft of feathers, about five inches long, on each side of the lower mandible; the head and neck are cinereous; the back is barred transversely with black, bright, and rust-colour; the greater quill-feathers are black; the belly is white; the tail, which consists of twenty feathers, is marked with broad bars of red and black; and the legs are of a dusky colour.

The female is about half the size of the male. The crown of the head is of a deep orange colour, traversed with black lines, and the rest of it is brown. The lower part of the neck before is ash-coloured; but, in other respects, it resembles the male, except that the colours of the back and wings are brightest.

This bird was once more numerous than it is at present; but the increased cultivation of the country, and the extreme delicacy of its flesh, have greatly thinned the species. Indeed, it would probably have been long since exterminated, but for its peculiar manner of feeding. Had it continued to seek shelter among our woods, it must have been destroyed in proportion as they were cut down; if in the forest, the fowler might have approached it unobserved; and the bird, from its magnitude, would have afforded such an excellent mark, that it could not easily have been missed. But the Bustard now inhabits only the open and extensive plains; where it is plentifully supplied with food, and where every invader of its repose may be seen at a considerable distance.

These birds are frequently seen in flocks of more than fifty, on the extensive downs of Salisbury Plain; on Newmarket and Royston heaths, in Cambridgeshire; the Dorset uplands; and even as far north as March, or Lothian, in Scotland.

In those diffusive plains where there are neither woods nor hedges to screen the sportsman, the Bustards enjoy a kind of indolent security. Their food is composed of the berries which grow among the heath; and of large earth-worms, which appear in great numbers on the downs before the rising of the sun during the milder months of the year. Thus situated, in vain does the fowler creep forward, in order to approach them; they have always sentinels placed on proper eminences, which are incessantly on the watch, and warn the flock of the smallest appearance of danger. However, it sometimes happens that, though these birds cannot be reached by guns, they are run down by greyhounds. As they are voracious and greedy, they often sacrifice their safety to their appetites; and, being generally very fat, they are unable to fly without much preparation. When the greyhounds therefore come within a certain distance, the Bustards run off, flap their wings, and endeavour to gather air enough under them to rise: in the mean time, the hounds are continually gaining ground; and, at last, it is too late for the birds to think of obtaining safety by flight. However, they run very fast; and, when on the wing, can fly several miles without resting.

As there are but few places where Bustards can at once find proper food and security, they generally continue near their old haunts, seldom wandering above twenty or thirty miles from home. As their food is replete with moisture, it enables them to live on those parched plains where there are scarcely any springs of water. But, as a security against drought, Nature has furnished the males with a pouch, the entrance of which lies immediately under the tongue, and which will contain near seven quarts of water; and this they fill, probably in order either to supply the hen when sitting, or the young till they are capable of flying.

Like all other birds of the poultry kind, Bustards change their mates at the season of incubation, which is about the latter end of summer. If the number of males and females is equal, they separate in pairs; but, should the males be most numerous, they fight till reduced to an equality. They build their nests on the ground, by scraping holes in the earth; and sometimes line them with a little straw or grass. They lay only two eggs, which are about the size of those of a goose, and of a pale olive-brown, with dark-coloured spots. They are about five weeks in hatching; and the young ones run about the moment they are emancipated from their shells.

Bustards generally live about fifteen years; but they cannot be propagated in a domestic state, as it is impossible to supply them with a sufficiency of that food in which they principally delight. They assemble in flocks in the month of October, and keep together till April. In winter, as their food becomes more scarce, they support themselves indiscriminately by feeding on moles, mice, and even little birds, when they can seize them. For want of other food, they likewise are contented to live on turnip-leaves, and other succulent vegetables. In some parts of Switzerland, they are found frozen in the fields in severe weather; but, when removed to a warm situation, they generally recover.

BUSTARD, ARABIAN. This bird is about the size of a turkey; but has a longer neck and legs, as well as a more slender body, than the common Bustard.

tard. The bill, which is about three inches and a half long from the extremity to the angles of the mouth, is of a light horn-colour, and a little darkish at the point; the nostrils are long, and placed near the forehead; the eyes are of a dark colour; and the fore-part of the head is white. Above the eyes there is a black line, which terminates in a point towards the forehead backwards; it gradually encreases in breadth, and forms a sort of black crest, from which proceeds a short black line, reaching almost to the hinder part of the eye. The fore part of the neck is cinereous, with small transverse lines of a darker colour; and the hinder part, as well as the back, is brown, with fine transverse blackish lines. The coverts of the wings are of the same colour with the back; the tips of the feathers, which are white, form semi-lunar spots; and the ridge of the wing, in the upper part, is white, from which proceeds a broad white bar, sprinkled with small black spots, separating the covert from the quill-feathers. The bastard-wing is black, except that the feathers have white tips; the foremost of the prime-feathers are black, and the middlemost are spotted with black and white; the inner quills next the back are of the same colour; the breast, belly, thighs, and the entire under-side, are of a pure white; the superior part of the tail is of the same colour with the back, but the exterior webs of the outmost feathers are partly white; the under-side of the tail has a black bar across it, near the tips of the feathers; the legs are pretty long; the toes, which are three in number, are short, and stand forward; the legs are bare of feathers for some space above the knees; both the legs and feet are covered with a scaly skin of a dirty white or lightish brown colour; and the claws are of the same. This bird is a native of Mocha, in Arabia Felix:

BUSTARD, INDIAN. This bird is about twenty inches in height, and is more slender in proportion than any other bird of the kind. The bill is of a whitish colour, and longer than that of the English Bustard; the sides of the head are of a bright brown; but the top of the head, and the whole neck, are covered with black loose hanging feathers. The back, rump, and tail, are of a light brown; but on the latter there are transverse black bars. All the covert-feathers of the wings are white, except the smaller ones about the joint, which are edged with black. The greater wing-feathers nearest the back are brownish, spotted with black; and the middle quills are white, with transverse bars speckled with black. The greater quills are white on their exterior webs, and the tips gradually become of a dark brown ash-colour. The whole of the under-side, from the breast to the tail, is cloathed with black feathers. The legs are long, and the toes short; the latter are three in number; and the former are bare a considerable distance above the knee. The toes all point forward, as in other birds of this kind, and are covered with whitish scales; but the claws are dusky.

This bird is an inhabitant of Bengal, in the East Indies; and was first described by Edwards, who took it from a drawing in the possession of Dr. Mead.

BUSTARD, LITTLE. This bird, to which Willughby gives the name of the field-duck, is about the size of a pheasant. The bill is of a flesh colour at the base, and black at the point; the head, the back part of the neck, the back, and the coverts of the wings, are brown, marked with irregular

spots of black; the throat is white; and the fore-part of the neck is of a lightish brown, with a dusky mixture. The covert-feathers on the inside of the wings, and the ridges of the wings, are white; and the outer quills are white at their bottoms, but black at their points. The breast and sides are white, spotted with black; the belly and thighs are wholly white; and the tail-feathers are brown, speckled with very small spots of white, and barred with transverse black lines. It has only three toes, which all stand forward; and the legs and feet are covered with yellow scales.

The Little Bustard has sometimes been found in this island, but is by no means common: it is, however, very plentiful in France. Dr. Shaw, in his Travels to Barbary and the Levant, has given a figure and description of this species, which the Moors call rhaad, or saf-saf-rhaad; that name, in their language, denoting thunder; and supposed to have been given to this bird from the noise it makes in springing from the ground, as saf-saf very naturally expresses the beating of the air when it is got on the wing.

BUTCHER-BIRD. The English name of the lanius, called also the shrike, the smallest of all the European birds of prey, yet very fierce and destructive.

The greater Butcher-Bird is only about the size of a blackbird. Its bill, which is black, is about an inch long, and hooked at the end; to which mark, together with its carnivorous appetite, it is indebted for being ranked among rapacious birds: but its slender legs and feet, and its toes, which are formed differently from those of other birds of prey, seem to make it the connective between those birds which live wholly on flesh and such as live principally on grain and insects. Indeed, its habits seem to correspond exactly with its conformation, as it feeds indiscriminately on flesh and insects, and, in some measure, is found to partake of a double nature. Its appetite for the former, however, is most prevalent; for when it can obtain flesh, it always gives it the preference to insects. Thus circumstanced, the life of this bird is a continual series of combat and opposition; its size being too insignificant to alarm some of the smaller birds of the forest, it frequently meets with antagonists who are willing to try their strength, and it never declines the engagement. It is astonishing to behold with what intrepidity this little creature will engage the pie, the crow, and the kestrel; all of which are considerably larger than itself, and sometimes prey upon flesh in the same manner. The Butcher-Bird, however, not only fights on the defensive, but frequently begins the attack, and always with advantage; particularly when the male and female unite to protect their young, and to drive away the more powerful birds of rapine. They do not, at this season, wait the approach of their invaders; it is sufficient that they see them at a distance preparing for the assault. They immediately fall forth with loud cries, and attack them with uncommon fury. They generally come off victorious in these contests; though it sometimes happens that they fall to the ground with their adversaries, and the combat ends in the destruction both of the assailants and the defenders. The most redoubtable birds of prey are on friendly terms with the Butcher-Bird; the kite, the buzzard, and the crow, seem rather to fear than wish to offend it. Nothing displays more the respect paid to this claim of courage, than to see this little bird, to contemptible

contemptible in appearance, fly in company with the falcon, and the other tyrants of the air, regardless either of their power or resentment.

The Butcher-Bird seizes small birds by their throats, and strangles them in an instant; the Germans therefore give it the name of the wurchangel, or the suffocating angel. When it has thus killed any birds or insects, it fixes them on some neighbouring thorn, and then pulls them to pieces with its bill. If confined in a cage, it treats its food in much the same manner; striking it against the wires before it attempts to devour it. Nature has not furnished it with strength sufficient to tear its prey to pieces with its feet, as the hawks do; and it is therefore obliged to have recourse to the above expedient. During summer, such of the Butcher-Birds as constantly reside here, remain among the mountainous parts of the country; but in winter they descend into the plains, and approach nearer to human habitations. The nests of the larger kinds are built in the highest trees; but those of the smaller are concealed in bushes in the fields, and hedge-rows. They lay about six eggs, which are white, encircled at their larger ends with rings of a brownish red colour. The outsides of their nests are composed of white moss interwoven with long grass; their insides are well lined with wool; and they are usually fixed among the forked branches of trees. When the young are produced, the female feeds them with caterpillars and other insects; but in a short time afterwards she accustoms them to flesh, which the male is very assiduous in procuring.

In their parental care, they differ from most other birds of prey; for, instead of driving out their young from their nests to shift for themselves, they carefully attend them, and do not forsake them even when they are capable of providing for themselves; and the whole brood live together in one family. Each family usually consists of the male, female, and five or six young ones; peace and subordination is preserved among them; and they usually hunt together. These birds are easily distinguishable at a distance, not only from their being in small parties, but from their peculiar manner of flying, which is seldom direct, or sideways, but generally moving up and down.

BUTCHER-BIRD, GREATER. This species weighs about three ounces, and is about ten inches long and fourteen broad. Its bill is one inch long, black, and hooked at the extremity; the nostrils are oval, covered with black bristles pointing downwards; the head is very large, and the muscles which move the bill are strong and thick. The crown of the head, the back, and the coverts on the joints of the wings, are cinereous; the rest of the coverts are black; the quill-feathers are black, with a broad white bar in the middle of each; and all of them are tipped with white, except the four first, and four of those next the body. The tail is composed of twelve feathers, the longest of which is in the middle; each side of the head is white, with a broad black stroke crossing from the bill to the hind part of the head; the throat, breast, and belly, are of a dirty white; and the legs are black. The female is of the same colour with the male, except on the breast and belly, which are marked with numerous semicircular lines.

BUTCHER-BIRD, RED-BACKED. The male of this species weighs about two ounces, and the female something more. The length of the male is seven inches and a half, and the breadth eleven

inches; the head and the lower part of the back are of a fine light grey; and a broad black stripe runs across the eyes from the bill. The upper part of the back, and the coverts of the wings are of a bright iron colour; the breast, belly, and sides, are of an elegant blossom colour; the two middle feathers of the tail are the longest, and entirely black, and the lower parts of the others are white. In the female, the stripe across the eyes is of a reddish brown; the head is of a dull rust colour inclining to grey; the breast, belly, and sides, are of a cream colour, marked with semicircular dusky lines; and the tail is of a deep brown, except that, in both the male and female, the exterior webs of the outward feathers on each side are white. These birds build their nests in low bushes, and lay about six white eggs, encircled on their larger ends with brownish red rings.

BUTCHER-BIRD, CREAM-BREASTED, frequently called the Wood-chat. The bill is of the colour of horn; the feathers which surround the base are whitish; a black line crosses the eyes, and falls downwards on each side of the neck; the head, and the hind part of the neck, are of a bright bay; the upper part of the back is dusky; the coverts of the wings and the tail are also dusky; the quill-feathers are black, with a white spot on each towards the bottom; the throat, breast, and belly, are of a cream colour; the two middle feathers of the tail are black; and the exterior edges and tips of the rest are white. In the female, the upper part of the head, the neck, and the body, are reddish, striated with brown; the lower parts of the body are of a cream colour, with rays of brown; and the tail is reddish, inclining to brown, and tipped with red.

BUTCHER-BIRD, CRESTED. The bill of this bird is somewhat like that of a hawk, but longer. Behind each eye there is a black spot, in shape like a crescent; black bristles project round the basis of the upper mandible of the bill; the crest, or crown of the head, is of a reddish colour; the upper side of the neck, the back, the rump, and the upper side of the tail, are red, or russet, but not so vivid as the crest. The sides of the head round the eyes, the throat, breast, belly, thighs, and coverts under the tail, are of a dirty pale orange colour, with transverse dusky lines; the wings are brown, the greater feathers being somewhat darker than the coverts, and edged with a lighter brown; the legs, feet, and claws, are black; the under side of the tail is of a clay colour, the middle feathers being the longest; and the side feathers gradually decrease in length.

This bird is a native of Bengal, where it is called charah.

BUTCHER-BIRD, LEAST. This bird resembles the long-tailed tit-mouse, and is hardly larger; an evident proof that an animal's courage or rapacity does not depend on its size. The bill is yellow, short, strong, and convex; the circle round the eyes is of a bright orange colour; and from the basis of the bill rises a broad black bar, which encircles the eye, and tending downwards below it, terminates in a point. The throat and sides of the head are white; the crown of the head is of a blueish ash colour; the breast is faintly tinged with a blossom colour; the beginning of the belly is whitish, the thighs, and those parts towards the vent, becoming darker; the sides under the wings are clouded with orange colour; the covert-feathers under the tail are black; the upper side, neck, back, and tail, are of a red brown, inclining to

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orange; the greater quills of the wings are black, edged with white; the inner next the back are black, edged with orange; the first row of the upper covert-feathers of the wings exactly corresponds in colour with the quills they cover, though in the orange-hue they are tipped deeper and brighter than the quills, and form a bar of orange across the wings; the lesser coverts are black; the ridges of the wings are white; the inferior covert-feathers of the wings are of a yellowish white; and between the back and the upper coverts of the wings a few light or whitish feathers are intermixed. The tail consists of twelve feathers, of which the middlemost are the longest, and gradually shorten towards the sides, till they become one half shorter than those in the centre; the inferior side of the tail declines from an orange to a cinereous colour; and the legs and feet are black. The hen differs from the cock in having no black marks round the eyes; the coverts under the tail are of a light brown colour; the top of the head is of a dirty brown; the back is sprinkled with some dusky spots, tending lengthways; and the point of the bill is black.

This bird, though not very common, has been discovered in different parts of England; and seems chiefly to frequent a marshy soil.

BUTCHER-BIRD, FORK-TAILED INDIAN. This species has a thick, strong bill, somewhat arched, and the upper mandible overhangs the lower. The basis of the upper mandible has several stiff hairs round it, projecting forwards; both the upper and the lower mandibles are of a dusky brown colour, lighter towards their bases, and gradually becoming darker towards their points. The whole head, neck, back, and covert-feathers of the wings, are of a bright shining black, reflecting blue, purple, and green, as they are turned and exposed to different lights. The greater quills, with some of the first row of covert-feathers next above them, are of a rusty black, without any lustre; but the quills next the body are of the colour of the head and back. The tail-feathers are shortest in the middle, and of a dull rusty black colour; the whole belly, thighs, and covert-feathers under the tail, are white; the sides and thighs are slightly clouded with dusky spots; and the legs, feet, and claws, are of a blackish colour.

This bird, which, from its peculiar formation, seems as proper to be referred to the magpie class as that of the Butcher-Birds, is a native of India, and is there called singah.

BUTCHER-BIRD, BLACK AND WHITE. This beautiful bird is a native of Surinam, in South America. Near the head the beak is pretty thick, but grows less towards the point, and is of a dusky colour. The upper mandible has a slight incurvation downwards, near the end, or tip, and overhangs the lower; and on each side of the point of the upper mandible there is a small notch or angle. The feathers at the base of the beak point forwards, and partly shade the nostrils; the plumage all over the head, body, wings, and tail, is black and white, with transverse bars or marks; the covert-feathers on the insides of the wings are almost white, having a very small proportion of black confusedly intermixed; the interior webs of the quills have white spots; and their insides, as well as the under side of the tail, are almost of the same colour with the upper. The tail is composed of ten feathers; the exterior toe of each foot adheres to the middle one near its bottom; the legs, feet, and claws, are dusky; and each single feather, all

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over the body, is marked with several transverse bars of black and white.

BUTEO. Another name for the buzzard.

BUTORIUS. A name sometimes given to the *ardea stellaris*, or bittern.

BUTRO. The name of a wild bull.

BUTS-KOPF. This fish, to which some naturalists give the name of the flounder's head, is best known in England under the appellation of the grampus. The snout, fins, and tail, resemble those of the dolphin; but the body is more than four times as thick, especially about the belly. It is eighteen feet long, and upwards of ten feet in circumference. The snout is flattish, and reverts upwards; the lower lip is so thick, that it falls from the upper as the fish lies along; and the mouth is armed with forty teeth, of which the foremost are blunt and slender, but the hinder are sharp and thick.

BUTTERFLY. In Latin, *Papilio*. A numerous genus of insects, furnished with mealy wings and spiral mouths, which undergo several transformations before they arrive at their perfect state. The caterpillars proceed from the eggs; these change into the chrysalides, or aureliæ; and then the Butterflies appear, which, from their beautiful and surprising variety of colours, may be regarded as some of the greatest curiosities in natural history, and therefore require a connected description through their various gradations.

Caterpillars, which constitute almost one-third part of insects in general, may easily be distinguished from maggots, or worms, by the number of their feet; as well as by their producing Butterflies, or moths, the first of which are called diurnal, and the latter nocturnal insects. When the sun calls forth vegetation, and vivifies the various eggs of insects, the caterpillars are the first which appear; and are accordingly seen on every vegetable and tree, eating their leaves, and preparing for a state of greater perfection. They have feet both before and behind; which not only enable them to move forward, but also to climb upwards on vegetables, and to expand themselves from the boughs and stalks, in order to reach their food at a distance. All reptiles of this class have from eight to sixteen feet; and this peculiarity alone may serve to distinguish them from the worm tribe, which never have so many.

The transmutations which caterpillars undergo are more numerous than those of any insects hitherto mentioned; and, in consequence, they have been placed in the third order of changes by Swammerdam, who has thrown so much light on the subject of natural history. When excluded from the eggs, they become crawling caterpillars; then insensible aureliæ, as they are called, without life or motion; and lastly, Butterflies variously painted, according to their different kinds.

It is well known by united experience, that all caterpillars are hatched from the eggs of Butterflies; and those who observe them most minutely, will find the fly very careful in depositing its eggs in places where they are likely to be hatched with the greatest safety and success. During the severity of winter, therefore, the greatest number of caterpillars continue in an egg state, in that lifeless situation defying all the rigours and humidity of the climate; and, though often exposed to all its changes, they still preserve the latent principles of life, which are more fully exerted at the approach of spring. The same power that pushes forth

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forth the budding leaf and the opening flower, impels the insect into animation; and Nature seems at once to furnish the guest and the feast; for when the insect has acquired sufficient strength to break its shell, it always finds its favourite aliment provided for it in abundance. All caterpillars, however, are not protruded from their eggs in the spring; many of them have subsisted during the winter in their aurelia state, when they are apparently deprived of life and motion. Some are inclosed in a kind of shells, which they have spun for themselves at the end of autumn; others are concealed under the bark of trees; some in the chinks of old walls; and many are buried in the ground. But some caterpillars do not make any change whatever at the approach of winter, but continue to live in their reptile state throughout all the inclemencies of that season. They generally make choice of some retreat, where they can remain undisturbed for months together; and, in fact, they then seem as motionless and insensible as if they were really dead. Their constitutions are such, that food would at these periods be useless; and the cold prevents their making those dissipations which require restoration. In general, caterpillars of this kind are found in great numbers together, inclosed in one common web, which covers them all, and screens them from the injuries of the air. And, lastly, there are some of the caterpillar-kind, the Butterflies of which live during the winter; and, after having fluttered about a considerable part of the latter end of autumn, seek out a winter retreat, in order to answer the ends of propagation at the approach of spring. These are often found lifeless and motionless in the hollows of trees, or the clefts of timber; but, on being brought near a fire, they recover life and activity, and seem to anticipate the desires of the spring. In general, however, whether the animals have subsisted in an egg state during the winter, as Butterflies bred from aurelias in the beginning of spring, or as Butterflies which have subsisted during the winter, and laid eggs as soon as the leaves of plants were shot forward; the whole swarm of caterpillars are in motion to share the banquet that nature has provided. There is scarcely a plant which has not its own peculiar insects; and some are known to support several of different kinds. Many of these are hatched from eggs, at the foot of the tree, and climb up to its leaves for subsistence; the eggs of others have been glued by the parent Butterfly to the leaves; and they are no sooner excluded from the shell, than they find themselves in the midst of plenty.

When the caterpillar first bursts from the egg, it is small and feeble, its appetites are in proportion to its size, and it seems to make no great consumption: but, as it increases in magnitude, it improves in its appetites; so that, in its adult or caterpillar state, it is the most ravenous of all animals whatsoever. A single caterpillar will consume double its own weight of leaves in a day, and seem in no respect disordered by the meal. Their voracious habits, with its slow crawling motion, and, still more, a stinging like that of nettles, which follows on handling the greatest number of them, render these insects, to most people, not very agreeable objects of curiosity. However, many philosophers have spent years in their contemplation; and have not only attended to their habits and labours, but minutely examined their structure and internal conformation.

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The body of the caterpillar, when anatomically considered, is found to be composed of rings, whose circumference is nearly circular, or oval. These annulations are generally twelve in number, and all membranaceous; and by these caterpillars may be distinguished from many other insects which nearly resemble them in shape. The heads of caterpillars are connected to the first rings by their necks; and are generally so short and contracted, that they are scarcely perceptible. All the covering of the head of one of these animals seems to consist of a shell; and they have neither upper nor under jaws, for they are both placed rather vertically; and each jaw is armed with a large thick tooth, which is, singly, equal to numbers. With these teeth the caterpillars devour their food in amazing quantities, and some of the kinds defend themselves against their enemies. Though their mouths are shut, their teeth always remain uncovered; and while the insects are in health, they seldom lie idle. Whatever leaves the caterpillars devour, their teeth serve to chop them into small pieces, and render their parts fit for swallowing. Many kinds, while they are young, eat only the succulent part of the leaf, and leave all the fibres untouched; others, however, attack the whole leaf, and eat it quite away: and it is amusing enough to observe the avidity with which these animals feed; some prolonging their feast throughout the whole day, others having their stated hours of repast, some chusing the night, and others the day. When the caterpillar attacks a leaf, it places its body in such a situation, that the edge of the leaf shall fall between its feet, which keep it steady; while the teeth are employed in cutting the leaf, somewhat after the manner of pruning-sheers; and every morsel is swallowed the instant it is cut. Some caterpillars feed on leaves so very narrow, that they are capable of managing the whole breadth at once; in which case they devour it from the point downwards.

As the species of caterpillars are various, so they also differ in the number of their feet, some having eight, and others sixteen. The six foremost are covered with a sort of shining gristle, and are therefore called the shelly legs. The hind feet, of whatever number they consist, are soft and flexible, and are thence called membranaceous. Caterpillars also, with respect to their external figures, are either smooth or hairy. The skin of the first kind is either soft to the touch, or hard like shagreen; while that of the latter is hairy, and somewhat prickly, and in general affects the fingers with a sensation like that occasioned by nettles; and some of them cause this stinging pain if but approached too near.

Caterpillars, in general, have six small black spots, placed on the circumference of the fore ring, and a little to the side of the head. Three of these spots, which are larger than the rest, are convex and transparent; and these Reaumur considers as the eyes of the caterpillars. However, most of these animals have very little occasion for sight, and seem only to be directed by their feelings. But the stigmata, as they are called, or those holes on the sides of the animal's body through which it is supposed to breathe, principally claim our attention. All along the body of the insect these apertures are easily perceptible: they are eighteen in number, nine on a side; and are placed rather nearer the belly than the back, affording a hole for every ring of which the animal's body is composed,

posed, except the second, the third, and the last. These oval openings may be considered as so many mouths, through which the insect performs the office of respiration; and, indeed, it requires no great share of anatomical dexterity to discover eighteen pair of lungs in the larger kinds of caterpillars, which appear, at first view, to be hollow, cartilaginous tubes, and of the colour of mother-of-pearl. These tubes are often seen to unite with each other; some are perceived to open into the intestines; while others lead to different parts of the surface of the body. That these vessels serve to convey the air, appears evident from the famous experiment of Malpighi; who, having stopped up the mouths of the stigmata with oil, quickly suffocated the animal. In order to ascertain his theory, he rubbed oil on other parts of the body of the insect, leaving the stigmata free; but this operation seemed to have no effect on the animal's health, as it continued to move and eat as usual: he then rubbed oil on the stigmata of one side only; when the animal underwent a partial convulsion, but recovered soon after. However, it should be remarked, that the air is not so necessary to these as to the nobler ranks of animals, since caterpillars will exist in an exhausted receiver for several days together; and though they may appear to lie dead at the bottom, when taken out, they recover, and resume their former vivacity.

If the caterpillar be dissected longitudinally along the back, it's intestines will be perceived to run in a straight line from the mouth to the anus. These guts resemble a number of small bags opening into each other, and strengthened on both sides by a fleshy cord by which they are united. On many occasions the insects are observed to cast forth the internal coats of their intestines with their food, during the changes they so frequently experience. But the intestines occupy but a small part of the animal's body, if compared with the fat or unctuous substance in which they are involved. This substance changes it's colour when the insect's metamorphosis begins to approach; and, from white, it is usually seen to turn yellow. If to these parts we add the insect's implements for spinning, we shall have a rude sketch of this animal's conformation; but the life of a caterpillar seems only one continued scene of successive changes; and it appears to throw off one skin merely to assume another, which also is divested in it's turn; and so on for eight or ten times successively.

We must not, however, confound this changing of the skin with the great metamorphosis which the insect is afterwards doomed to undergo. The throwing off one skin, and assuming another, seems, comparatively speaking, but a slight alteration, being only the work of a day; but the other is the great adventure of it's life. Indeed, this faculty of changing the skin is not peculiar to caterpillars only, but is common to all the insect tribes; and even to some animals which claim a higher rank in the scale of nature. With respect to caterpillars, many of them change their skins five or six times in a season; and these exuviae sometimes appear so compleat, that many might mistake the empty skin for the real insect. Among the hairy caterpillars, for example, the cast skin is covered with hairs; the feet, as well the gristly as membranaceous, remain affixed to it; even those parts which are only discoverable by the help of a microscope, are visible in it; and, in short, all the parts of the head, the skull, and the teeth.

In proportion as the time approaches when the caterpillar is to divest itself of it's old skin, it's colours become more faint; and the skin, which seems to wither, and grow arid in some measure, resembles a leaf deprived of moisture.

The insect now begins to feel itself under a necessity of changing; but this is not effected without violent labour, and perhaps pain. A day or two before the critical hour approaches, it ceases to eat, loses it's usual activity, and seems to grow totally torpid. It looks about for some place where it may remain in security; and, no longer timorous, appears regardless of the touch. It is observed, at intervals, to bend itself, and elevate it's back; then to stretch to it's full extent, sometimes to lift up it's head, and then to suffer it to drop; sometimes to wave from side to side, and then to remain in quiet. At length, some of the rings of it's body, particularly the first and the second, are seen to swell considerably; the old skin distends and bursts; till, by repeated swellings and contractions in every ring, the animal disengages itself, and creeps from it's former covering. How laborious soever this operation may be, it is performed in the space of a minute; and the animal, having thrown off it's old skin, seems to enjoy new vigour, as well as additional colour and beauty. Sometimes it assumes a new appearance, and colours very different from the old. Those insects which are hairy still preserve their coverings, though their ancient skins do not appear to have lost a single hair; every one of them appearing to have been drawn, like a sword from the scabbard. However, the fact is, that a new crop of hair grows between the old skin and the new, and probably helps to throw off the external covering.

In this manner the caterpillar having continued feeding for several days, begins at last to prepare for it's change into an aurelia. It is most probable that, from the beginning, all the parts of the Butterfly lay hid in this insect in it's reptile state; but that it required time to bring them to perfection, as well as a large quantity of food to enable it to undergo all it's transformations. However, when the caterpillar has fed sufficiently, and the parts of the Butterfly are formed beneath the skin, it is then the season for it to make it's first and principal change into an aurelia, or chrysalis, as some call it; during which, as has been previously remarked, it seems to remain for several days, or even months, without either life or motion.

Preparatory to this important metamorphosis, the caterpillar most usually quits the plant, or tree, on which it is fed; or at least attaches itself to the stalk or stem, in preference to the leaves. It renounces it's food, and prepares, by fasting, to undergo it's transformation. During this period, all the food it has swallowed becomes entirely digested; and it often voids even the internal membrane which lined it's intestines. Some of the tribe, at this period, entirely change their colour; and the vivacity of the tints in all of them seems considerably faded. Those which are capable of spinning themselves webs, set about these operations: and such as have already spun them, await their change in the best state they can. The webs, or cones, with which some of the insects cover themselves, hide the aurelias contained within them; but, in others, which are more transparent, the caterpillar, when it has finished it's spinning, strikes into the claws of the two feet under the tail, and afterwards forces in the tail itself, by contracting

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tracting those claws, and striking the feet violently against each other. If, however, the insects be taken from their webs at this time, they appear in a state of great languor; and, being incapable of advancing or retreating, remain wherever they are placed. In this condition they continue one or two days, preparing to change into aurelias, somewhat after the manner they adopted in changing their skins. They then appear with their bodies bent like bows, which they now and then seem to straighten; their legs appear entirely useless; and, if they attempt to change their places, these alterations are effected by evident contortions of their bodies. In proportion as their mutations into aurelias draw near, their bodies become more and more incurvated; while their extensions and convulsive contractions become more frequent. The extremities of their bodies are first disengaged from their caterpillar skins; those parts of their skins remaining empty, while their bodies are drawn up in a contracted form towards their heads. In the same manner they disengage themselves from the two succeeding rings; so that the animals are then entirely lodged in the fore parts of their caterpillar coverings; the half which is abandoned remaining flaccid and empty, while the fore parts are swelled and distended. The animals having thus quitted the hinder parts of their skins, in order to drive themselves up into their fore parts, still continue to heave and work as before; till their skulls are soon seen to burst into three pieces, and longitudinal apertures are made in the three first rings of their bodies, with reiterated efforts. Thus at last they totally emancipate themselves from their caterpillar skins, and for ever bid adieu to their reptile form.

Being stripped of it's last exuviae, the caterpillar becomes an aurelia; in which all the parts of the future Butterfly are distinguishable, but in so soft and tender a state, that the smallest touch is capable of discomposing them. The animal is now become helpless and motionless; but only waits for the assistance of the air, to dry up the moisture on it's surface, and to supply it with a crust capable of resisting external injuries. Immediately after being stripped of it's caterpillar skin, it assumes a green colour, especially in those parts which are distended by an extraordinary afflux of animal moisture: but, in ten or twelve hours after being thus exposed, it's parts harden; the air forms it's external covering into a firm crust; and, in about twenty-four hours, the aurelia may be handled without endangering the little animal left in this defenceless situation.

Such is the history of that small pod, or cone, which is so commonly found near every pathway, adhering to nettles, and other plants, and frequently shining like polished gold. From the beautiful and resplendent colour with which it is thus sometimes adorned, it has obtained the name of the chrysalis, which implies a creature made of gold.

The above are the efforts made use of by these little animals in preparing for a state of perfection. But their care in providing themselves secure retreats during this season of extreme imbecillity is still greater; and it appears as if they were then erecting monuments in which to rest perfectly secure till Nature called them into a new and more improved existence: for which purpose, some of them spin cones, or webs, in which they lie secure till they have arrived at maturity; others, who cannot spin such copious coverings, suspend themselves by their

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tails in retreats where they are not liable to annoyance; some mix sand with their gummy and moist webs, and then form themselves a secure incrustation; while others, before their change, bury themselves in the ground, and thus avoid the numerous dangers attendant on a more exposed situation. From their conduct, it might be supposed that they were conscious of the precise time of their continuance in an aurelia state; since their little sepulchres, with respect to their solidity, are proportioned to such a duration. Those which are to continue in that stage of existence but a few days, make choice of some tender leaf, which they render still more pliant by diffusing a kind of glue over it: the leaf thus gradually curls up; and, withering as it unfolds, the insect wraps itself within it, till the genial warmth of the sun enables it to struggle for new life, and burst from it's confinement. Others, whose time of transformation is also near at hand, fasten their tails either to some branch, or to the first worm-hole they meet in a beam, and await their change in that defenceless situation. Such caterpillars, on the other hand, as are seen to lie several months in their aurelia state, act with much greater circumspection: most of them mix their webs with sand, thereby rendering their coverings very strong; while others build in wood, which supplies, as it were, the place of coffins. Those which have made the leaves of willows their favourite food, break the tender twigs into small pieces, and then pound them to a sort of powder; and, by means of their glutinous silk, form a kind of paste, in which they enwrap themselves.

Various are the forms which these animals assume in this state of imbecillity; and it often happens that the most deformed Butterflies issue from the most beautiful aurelias. In general, however, the aurelia assumes the rude outlines of the parts of the animal contained within it; but, as to the various colours which it is seen to assume, they are chiefly the effects of accident; for the same species of insect does not at all times assume the same hue when it becomes an aurelia. In some, the beautiful gold colour is found at one time; while, at another, it is totally wanting. This brilliant hue, which is not inferior to the most superb gilding, is formed in the same manner in which we see leather obtain a gold colour, though none of that metal ever entered into the tincture. It is formed only by a beautiful brown varnish laid on a white ground; and the white, thus gleaming through the transparency of the brown, imparts a charming golden yellow. These two colours are found, one over the other, in the aurelia of the little animal we are now describing; and the whole appears as if gilded, without any real composition.

Thus formed, the aurelia is in time expanded into a Butterfly, and somewhat resembles an animal in the egg, waiting for external warmth to hatch it into life. As the quantity of humidity inclosed within the covering of the aurelia continues to keep it's body in the most tender state, it is requisite that this humidity should be dried up before the little Butterfly can burst from it's prison. Many experiments have been practised, in order to prove that nature may in this respect be assisted by art; and that the life of the insect may be retarded or quickened without being exposed to any real injury: for this purpose, it is only necessary to continue the insect in it's aurelia state, by preventing the evaporation of it's humidity, which will consequently add some days, or even weeks, to it's life;

on the contrary, by evaporating it's moisture, in a warm situation, the animal assumes it's winged state before it's usual time, and goes through the offices assigned to it's existence. To evince the truth of this, Mr. Reaumur inclosed an aurelia in a glass tube; and found the evaporated water, which exhaled from the body of the insect, collected in drops at the bottom of the tube: he then covered the aurelia with varnish; and, having thereby rendered the evaporation more difficult and slow, the Butterfly was two months longer than it's natural term in coming out of it's case. He found, on the other hand, that by laying the animal in a warm room, he hastened the disclosure of the Butterfly; and that by keeping it in an ice-house, in the same manner, he retarded it. Warmth, in this case, acted in a double capacity; invigorating the animal, as well as evaporating the moisture.

When, either by warmth or increasing vigour, the parts have acquired their necessary force and solidity, the Butterfly seeks to disembarass itself of those bands which kept it so long in confinement; some, however, continue under the aurelia form only ten days, some twenty, some several months, and others for a year together. But, in general, the Butterfly makes only a short continuance under it's aurelia form; and, in all, the perfect insect sooner or later bursts not only the natural prison which is formed by the skin of the aurelia, but also that artificial one in which it has inclosed itself. The efforts which the Butterfly makes to liberate itself from it's aurelia state, are by no means so violent as those which it experienced in changing from the caterpillar into the aurelia. The quantity of moisture which surrounds the Butterfly is by no means so copious as that which attended it's former change; and the shell of the aurelia is so dry, that it may be cracked between the fingers.

When the animal is shut up within a cone, the Butterfly always gets rid of the natural internal skin of the aurelia before it eats it's way through the external covering which it's own industry has formed round it. In order to observe the manner by which it divests itself of the aurelia covering, it is necessary to open the cone, and then the efforts of the insect to emancipate itself from it's natural shell may be plainly perceived. When this operation commences, there seems to be a violent agitation in the humours contained within the body of the little animal; it's fluids seem impelled by a hasty fermentation through all the vessels; while it labours violently with it's legs, and makes several other violent struggles to get free. As all these motions concur with the growth of the insect's wings and body, it is impossible that the brittle skin which covers it should long resist; and it at length gives way, by bursting in four distinct and regular pieces. The skin of the head and legs first separates; then the dorsal skin flies open, and dividing into two regular portions, disengages the back and the wings; and, at length, another rupture succeeds in that portion which covered the rings of the aurelia's back. After this the Butterfly, seemingly fatigued with it's exertions, remains very quiet for some time, with it's wings pointed downwards, and it's legs fixed in the skin which it has just thrown off. At first sight, the animal, just set free, and permitted the future use of it's wings, seems entirely destitute of any; and they lie so close, and occupy so little room, as to be entirely imperceptible: however, they soon after expand so rapidly, that

the eye can scarcely attend to their unfolding. From reaching hardly half the length of the body, they acquire, in a most wonderful manner, their full extent and magnitude, so as to be each five times as large as before. Nor are the wings alone thus increased; all their spots and paintings, before so minute as to be hardly perceptible, are now proportionably extended; so that what a few minutes before seemed only a number of confused, unmeaning points, now become distinct and beautiful ornaments. The wing, the instant it is freed from it's late confinement, is considerably thicker than afterwards; so that it spreads in all it's dimensions, and grows thinner as it expands in breadth. If one of the wings be plucked from the animal just set free, it may be spread by the fingers, and it will soon become as broad as that which is left behind. As the wings extend themselves so suddenly, they have not had proper time to dry; and accordingly appear like pieces of wet paper, soft, and wrinkled. In about half an hour, they become perfectly dry; their wrinkles entirely disappear; and the little animal assumes all it's splendor. The transformation being thus perfectly finished, the Butterfly discharges three or four drops of blood-coloured fluid, which are the last remains of it's superfluous moisture. Those aurelias which are inclosed within cones, find their exit more difficult, as they have still another prison to break through: this, however, they accomplish in a short time; for the Butterfly, divested of it's aurelia skin, butts with it's head violently against the walls of it's artificial prison; and probably with it's eyes, which are rough like a file, it rubs the internal surface away, till at last it is seen bursting it's way into open light; and, in less than a quarter of an hour, the animal arrives at full perfection. Thus, to use the words of Swammerdam, we see a little insignificant creature distinguished in it's last birth with qualifications and ornaments which man, during his stay on earth, can never even hope to acquire. To enjoy life, the Butterfly needs no other food than the dews of heaven, and the honied juices which are distilled from every flower. The pageantry of princes cannot equal the ornaments with which it is invested, nor the rich colouring which embellishes it's wings. The skies are it's proper habitation, and the air it's element; while man comes into the world naked, and often roves about without habitation, and without shelter; exposed, on the one hand, to the heat of the sun; and, on the other, to the damps and exhalations of the earth; both alike inimical to his happiness and existence: a striking proof that, while this little animal is raised to it's greatest exaltation, man, in this world, is only a candidate for perfection.

The number of these beautiful insects is amazingly great; and though Linnæus has enumerated above seven hundred and sixty different species, the catalogue is still very incomplete. Every collector of Butterflies can exhibit undescribed species; and he who is fond of minute discovery, can produce animals observable only by himself. In general, however, those of the warmer climates are larger and more beautiful than such as are found in Europe; and we can easily dispense with the beauty of the Butterfly, since we are thus freed from the ravages of the caterpillar.

The wings of Butterflies, as already observed, fully distinguish them from flies of every other denomination. They are four in number; and, should

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Should two of them be cut off, the animal would notwithstanding be capable of flying. They are, in their own substance, transparent; and owe their opacity to the beautiful dust with which they are sprinkled; and which has been assimilated by some naturalists to the feathers of birds; and, by others, to scales of fishes; just as their imaginations were disposed to catch the resemblance. In fact, if we view the wing of a Butterfly with the assistance of a good microscope, we shall find it to be studded over with a variety of little grains of different dimensions and forms, generally supported on a steeple, regularly laid on the whole surface. Nothing can exceed the beautiful and regular arrangement of these little substances, which thus seem to adorn the Butterfly's wing, like the tiles on a house, those of one row being a little covered by the subsequent: they are also multiform; for on one part of the wing may be seen a succession of oval studs; on another, a cluster of studs, each in the form of a heart; in one place they resemble an open hand; and, in another, they are long, or triangular; while all are interspersed with taller studs, which grow between the rest, somewhat after the manner of mushrooms on a stalk. The wing itself is composed of several thick nerves, which render the construction very strong, though light; and, though covered over with thousands of these scales, or studs, it's weight is very little increased by the number. The animal is with ease enabled to support itself a long time in the air, though it's manner of flying is not very graceful. When the Butterfly intends a distant flight, it ascends and descends alternately, moving sometimes to the right, and sometimes to the left, without any apparent motive. On a closer examination, however, it will be found to fly in this irregular manner in pursuit of it's mate, whom it seems capable of discovering at a considerable distance.

The body of the Butterfly may be divided into three parts; the head, the corselet, and the body. The body, which is the hinder part of the insect, is composed of rings, generally concealed under long hair. The corselet is more solid than the rest of the body, because it gives rise to the fore-wings and the legs. The legs are six in number, though only four are made use of by the animal; the two fore legs being often so much concealed under the long hair of the body, that it is difficult to discover them. If we examine these parts internally, we shall observe the same set of vessels in the Butterfly which composed the caterpillar; but with this difference, that as the blood or humours in the caterpillar circulate from the tail to the head; in the Butterfly, they are found to take a course directly contrary, and to circulate from the head to the tail: so that the caterpillar may be considered as the embryo animal, in which the circulation is carried on differently from that of animals when excluded.

The eyes of all Butterflies have not the same external appearance; for, in some, they are large; in others, small; in some, they are the larger portion of a sphere; in others, they are but a small part of it, and just appearing from the head. In all of them, however, the exterior coat has a lustre, in which may be discovered the various colours of a prism. When examined minutely, it will appear like a multiplying-glass, having a great number of sides, or facets, in the manner of a brilliant-cut diamond. In this particular, the eyes of Butterflies, and of most other insects, entirely correspond: and Leewenhoeck asserts, that there are above six thou-

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sand facets on the cornea of a flea: hence these animals see not only with great perspicuity, but view every object multiplied in a very surprising manner. Puget adapted the cornea of a fly in such a position, as to see objects through it by means of a microscope; and nothing could exceed the strangeness of it's representations. A soldier who was viewed through it, appeared like an army of pigmies; for while it multiplied, it also diminished the object. The arch of a bridge exhibited a spectacle more magnificent than human skill could perform; and the flame of a candle appeared like a splendid illumination. But it must be confessed, that still it remains a doubt, whether the insect sees objects singly, as with one eye; or whether every facet is itself a compleat eye, exhibiting it's own object distinct from all the rest.

Butterflies, as well as most other flying insects, are furnished with two instruments, like horns, on their heads, which are called antennæ, or feelers. They differ from the horns of greater animals in being moveable at their bases, and also in having a great number of joints, by which means the insect is enabled to turn them in every direction. Those of Butterflies are placed at the top of the head, pretty near the external edge of each eye. What the use of these instruments may be, which are thus formed with so much art, is as yet unknown to man; but of this we may be certain, that they answer some beneficial purposes: they may, perhaps, serve to guard the eye; they may be useful to clean it; or they may be the organs of some senses of which we are entirely ignorant.

Few insects of the Butterfly kind are destitute of trunks; and of their uses naturalists are sufficiently apprized. They are placed exactly between the eyes; and, when the animals are not employed in seeking their nourishment, they are rolled up in curls. A Butterfly, when feeding, flies round some flower; and, settling on it, uncurls it's trunk, and thrusts it out, either wholly or in part, and employs it in searching the flower to it's very bottom. This search being reiterated seven or eight times, the animal then passes to another; and continues to hover over such flowers as are most agreeable to it's taste, like a bird over it's prey. This trunk is composed of two equal hollow tubes, nicely joined to each other, like the pipes of an organ.

Such is the general figure and conformation of these beautiful insects, which cheer our walks, and add to the beauty of the most delightful season. But it is not by day alone that they wantonly flutter from flower to flower; numbers of them chuse the night for their excursions, and expand their most beautiful colourings during those hours when no human eye beholds them. This tribe of insects therefore has been divided into diurnal and nocturnal flies, or into Butterflies and moths. They may be easily distinguished from each other by their horns or feelers; those of the Butterfly being clubbed, while those of the moth taper to a point.

These two classes equally employ their short existence in a variety of enjoyments. They employ a considerable part of their time in searching for their food, which is found on every flower; and in the pursuit of the females, whose approach they can often perceive at the distance of more than two miles. Their sagacity in this respect is no less astonishing than true; but, by what sense they are thus capable of distinguishing each other at such distances, is not easy to conceive. It is impossible that it can be through the strength of their

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their sight, since such small objects would be utterly imperceptible at half the distance; neither can it be by the sense of smelling, since these animals are not furnished with any organs for that purpose. But whatever may be their power of perception, certain it is, that the male, after having fluttered about for some time, is seen to take wing, and proceed directly forward to the place where the female is perched on a flower.

Among the various tribes of insects, it is the general rule that females are larger than the males; and it holds good in a peculiar manner with respect to Butterflies. The body of the male is smaller, and more slender; and that of the female more thick and oval. Previous to the junction of these animals, they are seen sporting in the air, alternately pursuing and flying from each other, and preparing, by a kind of amorous dalliance, for the more important business of their lives: and if disturbed in the act of coition, the female flies off with the male, who appears entirely passive on the occasion.

The females of many species of Butterflies seem to have assumed their airy forms for no other purpose than that of fecundating their eggs, and laying them. They are neither seen fluttering about in quest of food, nor of mates; and all that passes during their short lives, is only a junction with the males for about half an hour; after which they deposit their eggs, and die.

The eggs of female Butterflies are disposed in their bodies like beds of chaplets; and, when excluded, they are generally oval, and of a whitish colour: some, however, are entirely round; and others flatted like turnips. The covering, or shell, of the egg, though solid, is thin and transparent; and, in proportion as the caterpillar expands within the egg, the colours change, and are differently distributed. The Butterfly seems perfectly instructed by Nature in it's choice of the plant or leaf on which to deposit it's burden. Each egg contains but one caterpillar; and it is requisite that the little animal, when excluded, should be near it's proper food: accordingly the little winged creature, though it has itself been fed on dew, or the honey of flowers, makes choice of a very different species of provision for it's young, and deposits it's eggs on the most unfavourable plants, such as the ragweed, the cabbage, or the nettle. Thus every Butterfly selects not the plants most grateful to it in it's winged state, but such as it has been fed on in it's reptile form.

The eggs of Butterflies are always attached to the leaves of their favourite plants, by a kind of size or glue; where they continue unobserved, unless carefully sought after. They are sometimes placed round the tender shoots of plants, in the shape of bracelets, consisting of more than two hundred in each, and generally surrounding the shoot like a ring. But some Butterflies secure their eggs from the injuries of the air by covering them with hair plucked from their own bodies; and by this precaution they are kept warm, as well as entirely concealed.

The females of moths lay their eggs soon after they are emancipated from their aurelia state: but there are many Butterflies which flutter about the whole summer, and never think of laying till the cold warns them of their approaching end; and some even continue the whole winter in the hollows of trees, and neglect to provide for posterity till the beginning of April, when they leave their retreats,

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deposit their eggs, and die. Their eggs soon begin to feel the genial warmth of the sun; the little animals burst from their caterpillar state; then become aurelias and Butterflies in their turn; and thus continue the round of nature.

Endued, as Butterflies are, with so many stages of existence, and possessed of such astonishing beauty in that state which we may well pronounce their perfect one, it is by no means to be wondered that they should have been noticed, in their several mutations, with the utmost precision, by those who have had leisure to cultivate so pleasing an amusement: and there are not wanting some ingenious naturalists, who have acquired no inconsiderable portion of fame from the accuracy of their observations on these insects alone, though a compleat general history of Moths and Butterflies, Foreign as well as English, seems still to be among the many desiderata of Natural History. Indeed, those who have made the greatest progress in other branches of the science, have in general declined the investigation of every kind of insects: convinced that the infinitude of different tribes, and the extreme minuteness of many of them, would render the utmost efforts of human sagacity unequal to the task of forming a compleat discrimination.

Butterflies have by some naturalists been divided into seven classes, after the following manner.

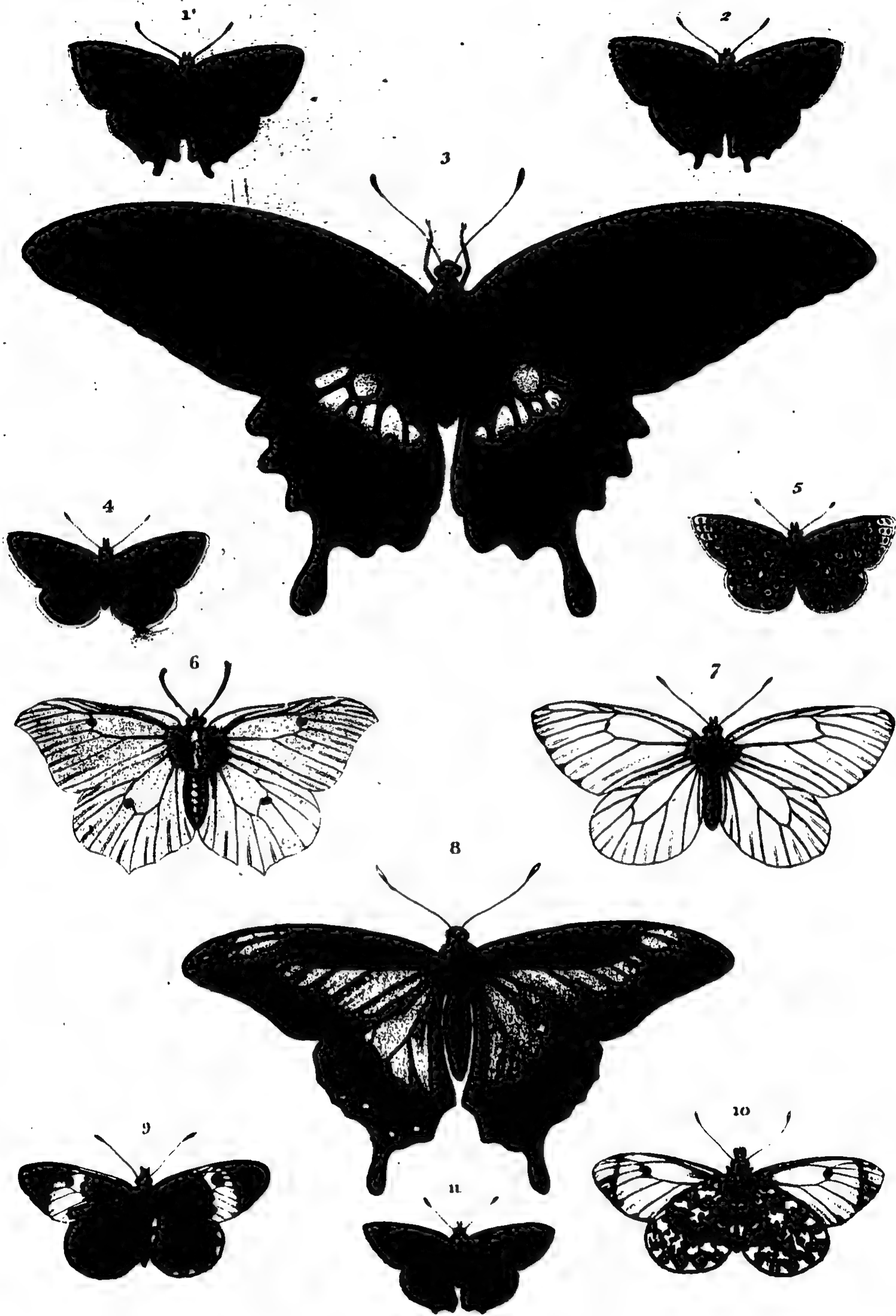
The first class consists of those which have clavated feelers, keep the planes of their wings perpendicular to that of position, and whose lower wings are applied close to the under parts of their bodies; and these likewise stand and walk with each of their six legs. The white Butterfly, spotted with black, is an instance of this kind.

The second species consists of those which have their wings perpendicular to the plane of position, and whose lower edges likewise only embrace the lower parts of their bodies; they settle on four legs, and generally keep the fore pair of legs folded up. Several kinds of the prickly caterpillars produce Butterflies of this class, and particularly the prickly caterpillar of the nettle.

The third class is composed of Butterflies which carry their wings erect, and have the same sort of feelers as the former class; they only use four legs, the other pair being so small as to be scarcely perceptible. A variety of species may be referred to this class; and particularly some which have their wings spotted with black and white in the shape of the squares of a chess-board.

The fourth class likewise contains Butterflies with clavated feelers, and six real legs. When at rest, they hold their wings perpendicular to the plane of position, but have the edges of their lower wings turned up, so as to embrace and cover the upper parts of their bodies, while all the rest are naked. Besides this, each lower wing has a long appendage near the external end of the base, and a part whose point reaches much beyond the rest of the body. This part seems to form a tail, and therefore some have called this insect a tailed Butterfly. However, there are Butterflies which are destitute of these appendages; and yet have their lower wings so bent, that they embrace the lower parts of their bodies. Butterflies of this class generally appear towards the latter end of July.

The fifth class consists of those which have clavated feelers, and six true legs; but, when they are at rest, generally keep their wings parallel to the plane of position, or at least never elevate them sufficiently for the two upper wings to embrace each



BUTTERFLIES. Plate I.

each other above the body. A Butterfly of this class proceeds from a smooth caterpillar of marsh-mallows.

The sixth class is characterized by having clavated feelers, increasing in thickness from their roots to their points. They seem almost continually in motion, hovering over flowers, and thrusting in their trunks, in order to extract the juice. From the noise they make with their wings, some call them by the name of humming-bird moths; but Beaumont places them among the papillio, because the wings of some species are not so entirely covered with farina as to be quite opaque, for they are partially transparent.

Lepidoptera of the seventh class have feelers incurvated in the form of rams-horns; of which kind is the Butterfly found very commonly in meadows, on the stocks of plants, and which flies very little in the day-time. Merian, from this circumstance, contends, that it ought to be referred to the class of moths; but Ray and Reaumur place it among Butterflies. Ray likewise makes another class of these Butterflies, with feelers like conical threads.

Mr. Harris, secretary to the Aurelian Society, has given us the following synoptical system of the Papillio, commonly called Butterflies.

Butterflies, says this ingenious gentleman, are distinguished from other insects by these generical characters: their antennæ, or horns, are clubbed at the extremities; their wings, when at rest, are closed together erect over their backs; and they fly only in the day-time.

Linnaeus has divided them into five phalanges, or genera; viz. Equites, Heliconii, Danaï, Nymphales, and Plebeii.

In that genus which is called Equites, the underwings have each an appendage, or tail; and, from this circumstance, they are denominated swallow-tails.

In the Heliconii, the wings are long, narrow, and even at the edges; the superior ones being large, and the inferior small.

In the Danaï, the wings are smooth and even at the edges, without denticulations or tails, exactly like those of the common white Butterfly.

In the Nymphales, the wings are denticulated, and ocellated, having eye-like spots or rings.

The Plebeii comprehends the numerous tribes of minute Butterflies which seem to be a distinct generation or order from any of those just enumerated.

In this country, we have only about fifty-three species: for a more particular account of which the curious reader is referred to Mr. Harris's English Lepidoptera, as it is not possible, in a work of this very general nature, to give more of these elegant insects than a few of the most beautiful and curious specimens in the different genera.

The reader is accordingly presented with accurate descriptions, and delineations from nature, of those which appeared most likely to be acceptable; and some of them are actual non-descripts, from different parts of the world.

These are arranged on four plates, in the following manner.

PLATE THE FIRST.

Fig. 1. BROWN HAIR-STREAK; the BETULÆ, Plebeii, of Linnaeus. The head, thorax, and abdomen, are of a dark brown-colour; and the

wings are also of a lovely dark brown, the superior ones having each a large orange-coloured spot near the tip, which almost covers the fan-membranes.

Fig. 2. Under-side. The under-side is of a brownish orange-colour. The superior wings have each a triangular spot near the tip, reaching from the sector-edge half way down the wing, where it terminates in a point, which is not only of a darker brown than the rest, but edged round with a near white line; there is also a small black spot near the middle of each superior wing. The inferior ones have each a broad bar extending quite across; which is of a darker orange-brown than the rest of the wing, and neatly edged or bordered with white.

The expansion of the wings, from tip to tip, is one inch and three-quarters.

The caterpillar feeds on buckthorn: it changes into a chrysalis in July, and the fly comes forth in August; when it may be found playing on the tops of hedges, near maple-trees, round which it sportively pursues others of its own species.

Fig. 3. The DEIPHOBUS, Equites, of Linnaeus.

The antennæ, head, thorax, and abdomen, together with the superior wings, are of a fine dark brown; each wing having, near the shoulder ligament, two triangular spots of deep scarlet, the largest near three-quarters of an inch long, and the other, beneath it, about the size of a canary-feed. The inferior wings are of an orange-brown, but very pale: in the centre, on each membrane, near the fan-edge, is a large black spot; and these, joining together, compose a broad irregular bar reaching to the abdominal part, where there are two separate and distinct spots on each wing. The tails are black, and on the fan-edge of each there are six crescent-shaped spots of orange-brown.

The expansion of the wings is six inches and a half.

Edwards says that this Butterfly is a native of China, but it is also known to exist in many parts of the East Indies.

The insect above described is a female: the male, which is smaller, is given by Edwards, who seems to produce it as a distinct species, though their markings are similar, and both were brought from China.

Fig. 4. The BLUE-FLY; the ARGUS, Plebeii, of Linnaeus. The antennæ are black, having white specks down them; the head is covered with white hair; and the thorax and abdomen are clothed with hair of a lightish blue colour. The wings, which are of a most splendid and beautiful blue, have the gloss of fine satin; and they are each bordered or fringed with white.

Fig. 5. Under-side. The under-side is of a grey or cinder-colour, sprinkled all over with small eye-like rings of white, each having a black spot in the middle.

The expansion of the wings is one inch and three-eighths.

The Blue-Fly is common in England. It appears the beginning of June; and is found playing among long grass in meadows, where it constantly sleeps at night.

Fig. 6. BROAD GREEN-BARRED SWALLOW-TAIL.

The head, thorax, and abdomen, as well as the wings,

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wings, are of a fine deep black, having a broad bar of a light sea-green colour, which takes its rise from a few spots of the same hue near the apex; and, crossing the membranes to the slip-edge near the thorax, extends to the width of three-quarters of an inch, when it seems to renew its course across the under-wings to the abdominal groove, where its width is exactly the same length as the abdomen. On the lower border of the under-wings, there are six spots of a light sea-green colour, one on each membrane; the abdominal alone excepted, which has none.

The expansion of the wings is exactly four inches. This Butterfly, though supposed by some naturalists to be a non-descript, may be seen in Sir Hans Sloane's History of Jamaica; and it is frequently met with in the Brazils.

Fig. 7. BLACK-VEINED WHITE; the CRATAGI, Heliconii, of Linnæus. The thorax and abdomen are black, and covered with a fine hair of a greyish colour, tinged with a greenish hue. All the wings are of a lovely white, with a slight tincture of pale sea-green. The tendons of the wings are very conspicuous, appearing as neat lines of black. The under-side has a similar appearance, only the black tendons appear stronger, and the general colour of the wing partakes of a yellowish-green.

The expansion of the wings is two inches and three-quarters.

The caterpillar feeds on the white-thorn, and assumes the chrysalis in May; and the fly, which appears in June, greatly delights in hovering over corn-fields.

Fig. 8. BRIMSTONE; the RHAMNI, Danaï, of Linnæus. The antennæ are of a rose-colour; and not unlike, either in form or colour, the tubes or buds of the woodbine or honey-suckle. The thorax and abdomen are black, covered with white hair of a brilliant silver gloss, like the finest satin. The wings are formed in a manner peculiar to this genus; the shoulder-part of the sector-edge projecting beyond the palpi, and the upper or superior wings coming to a sharp point at the tips or apices. The inferior wings have two sharp points at the lower edge. The whole of the wings are of a most beautiful yellow, with a brimstone cast, but much deeper, having a small spot of orange-red near the middle of each.

The expansion of the wings is two inches and a half. The caterpillar, which is green, feeds on buckthorn, in May; and, changing into its chrysalis state about the end of that month, the fly comes forth at the end of June, and is seen in fields, meadows, lanes, commons, and woods.

Fig. 9. LADY OF THE WOODS; the CARDUAMINOS, Danaï, of Linnæus. The head is yellow, covered with hairs of a pale green; the thorax and abdomen are black, having hair of a yellowish colour. The superior wings are of a fine cream-colour; except one-half towards the tip or apex, which glows with an orange-red so extremely brilliant, as to render it quite inimitable by the finest colourers in the world. The tips are tinged with brown, and a small black spot is seen in the middle of each wing, just within the verge of the orange-colour. The under wings are of a fine cream colour, and entirely plain.

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The expansion of the wings is one inch and three-quarters.

The caterpillar feeds on wild cole, &c. and changes to a chrysalis in July; but the fly does not appear till the ensuing spring, about the beginning of May. It delights in meadows; round which, by the hedges, it will continue to fly more than twenty times successively without once settling. Indeed, we never remember to have seen one of them at rest.

Fig. 10. Female. The Female Lady of the Woods in some respects very much resembles the male, but in others is materially different. She is somewhat larger, and the markings or characters are more gross; but she is destitute of that beautiful orange-colour on the upper-side of the superior wings which so eminently distinguishes the male. The under-side is of a milky white; the sector-edges and tips of the superior wings, for near a quarter of an inch, are dappled with green; and, in the centre, on the table-bar, there is a black spot or mark like the point of a broad-arrow. The inferior wings are all over beautifully marbled or sprinkled with green irregular markings, here and there a little tinged with yellow. The expansion of the wings is two inches.

Fig. 11. COPPER; the VIRGAURÆ, Plebeii, of Linnæus. The eyes and head are of a dark-brown; the former being nearly encircled by a neat line of white. The superior wings, which are of a bright red copper-colour, have seven or eight black spots, and are edged with a brown border. The under-wings are of the same dark brown, having each a broadish border at the bottom or fan-edge, with four spots of black. The expansion of the wings is one inch and an eighth. It flies in meadows, in June and August; and may be found sitting on the grass before sun-rise in company with the blue-fly.

PLATE THE SECOND.

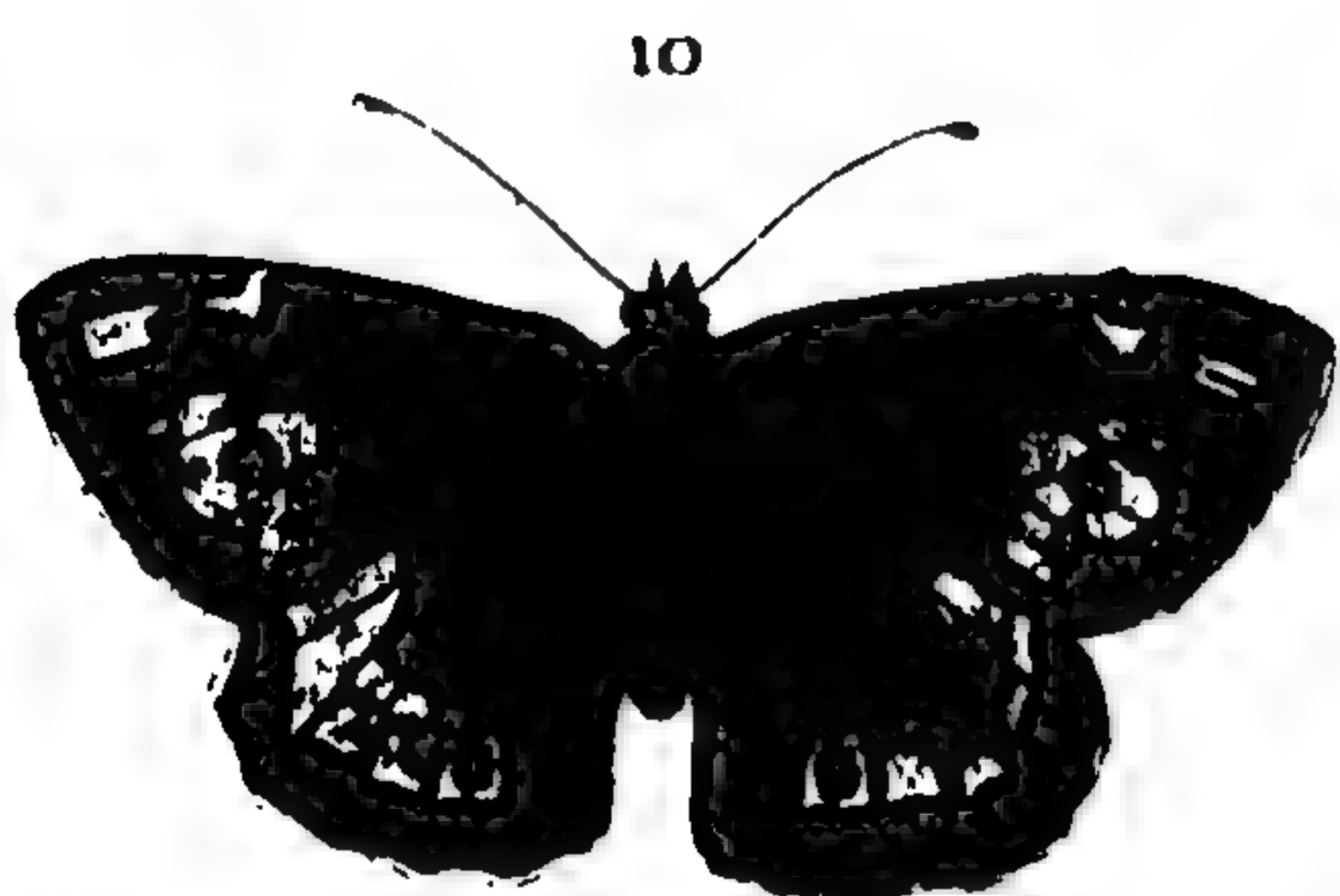
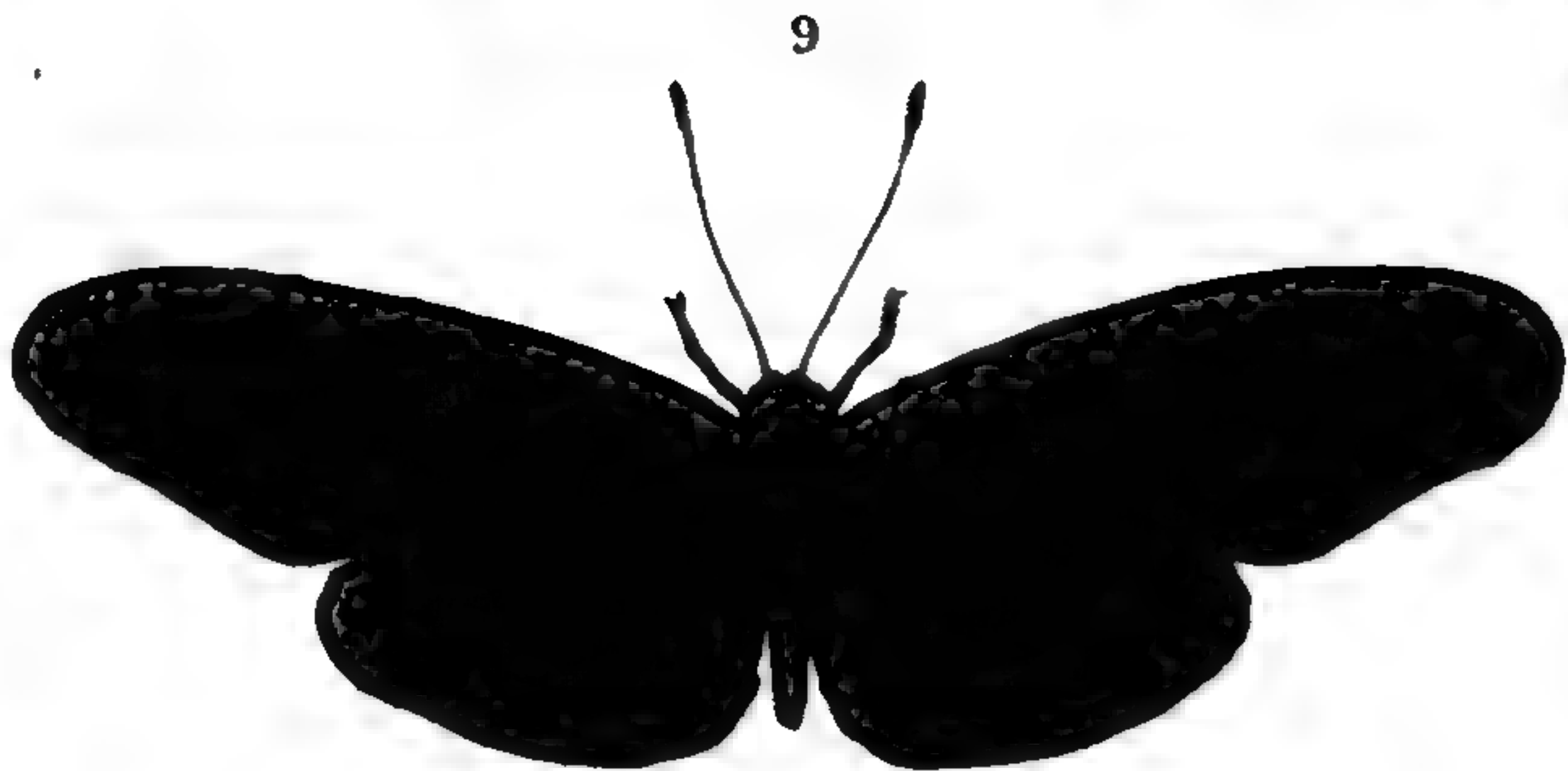
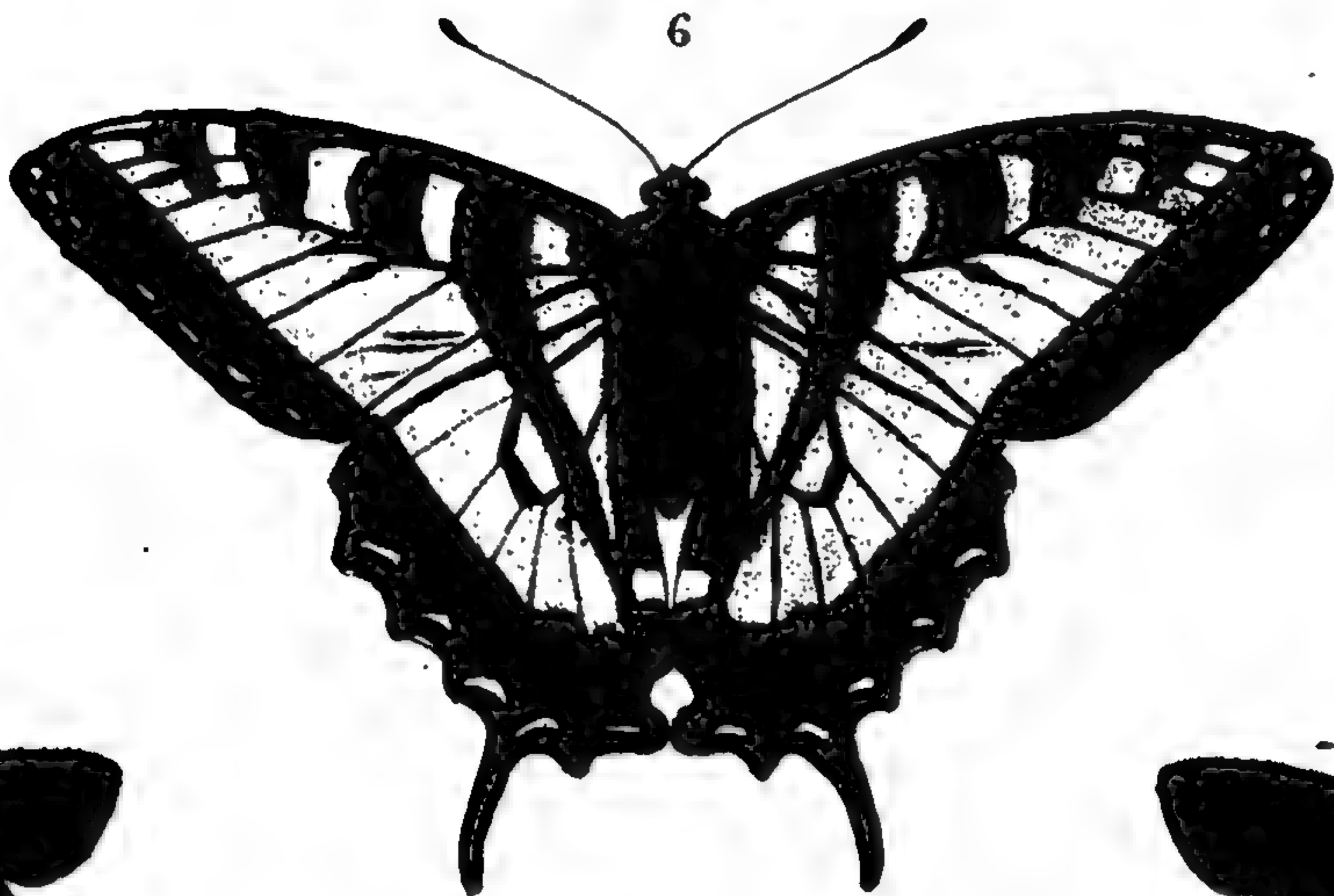
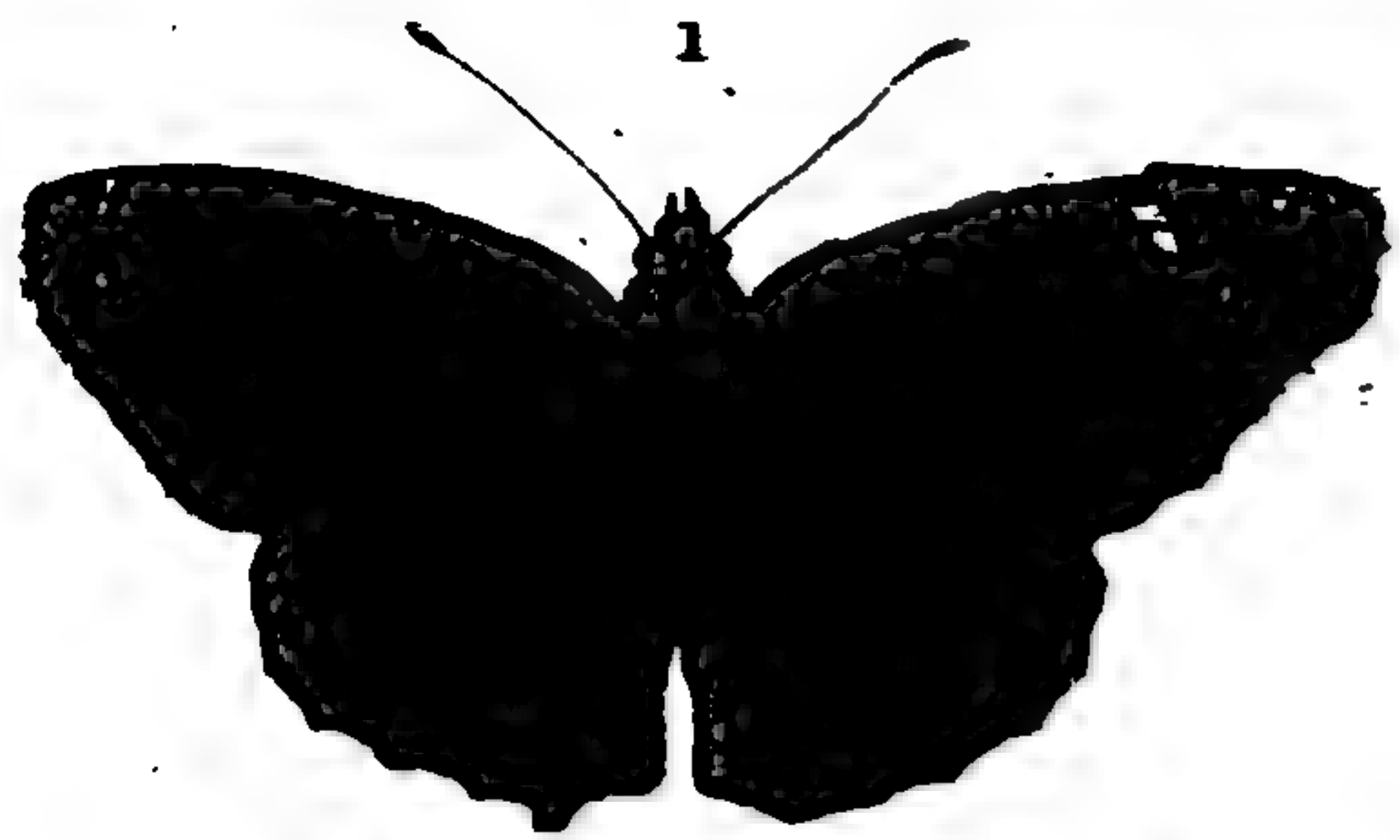
Fig. 1. PAINTED LADY; the CARDUI, Nymphales, of Linnæus. The head, thorax, and abdomen, are dark-brown, covered with hair which shines like bronze or gold. The wings in general are of a brownish orange-colour, dappled with black spots or clouds of various shapes; especially those parts of the upper-wings next the apices, which are all black, except five white spots on each.

Fig. 2. Under-side. The palpi are white, the eyes are red, and the thorax is a light-brown. The upper or superior wings are of a fine light orange-colour, but they become a deep crimson near the body; and the parts towards the tips are of a pale brown, having five white spots. The remaining parts are dappled with black, and there is one large white spot nearly square on the sector-edge. The inferior wings are of a pale yellow-brown, dappled with dark brown spots of various forms, but nearly of a size. Near the lower border, there are five eye-like circular spots.

The expansion of the wings is two inches and a half.

The caterpillar, which feeds on thistles and nettles, changes to the chrysalis in July, and the fly comes out in August. It is fond of settling on docks and thistles, near banks or dung-hills.

Fig. 3. GREAT TORTOISE-SHELL; or the POLYCHLOROS,



BUTTERFLIES. Plate II.

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CHLOROS, Nymphales, of Linnæus. The head is a dark brown; the antennæ are long; and the thorax and abdomen are black, covered with brown glossy hair. The superior wings are of a fine orange-brown, with seven large spots of black, two of which are much larger than the rest, and join to the upper or sector-edge of the wing, one near the middle of the edge being nearly square. The outer or fan-edges are bordered with black, having seven spots of light brown, one on each membrane. The inferior wings are of the same orange-brown as the superior ones; but they are black towards the body; and the lower or fan-edges are bordered with dark-brown, having a black triangular spot on each membrane, where there is a fine blue spot in the form of a crescent. This fly, though not gaudy, is of a very grand appearance.

The expansion of the wings is two inches and three-quarters.

The caterpillar, which feeds on elm-trees, changes to the chrysalis about the end of June, and the fly comes forth in July. It is found flying about in lanes, and is remarkably fond of settling on the bodies of trees.

Fig. 4. GATE-KEEPER; the MEGERA, Nymphales, of Linnæus. The head, thorax, and abdomen, are of a very dark olive-brown; the superior wings are of a fine orange-brown; the outer, or fan-edges, have a fine broad border of dark olive-brown. Near the apex or tip of each wing, there is a large black spot about the size of a hempseed, in which are two fine white specks smaller than the head of a minikin pin. The inferior wings are of the same orange-brown as the superior; but, being bordered round with dark olive-brown, the ground-colour of orange-brown appears like a spot in the middle. Near the abdominal corner there is a black spot, having a white speck in the middle; indeed, in some species there are two, and in others none. That which we have described is a female: the male is less, of a deeper colour, and has a large brown cloud in the middle of the superior wings.

Fig. 5. Under-side. The under-side is similar to the upper; except in the inferior wings, which are of a light clay-colour clouded with brown. In these clouds there are five white specks; two near the abdominal corner of each wing, and three near the upper edge.

The expansion of the wings is one inch and three-quarters.

The caterpillar, which feeds on grass, changes to the chrysalis in June, and the fly appears in July. It chiefly flies about banks and hedges in meadows.

Fig. 6. NEW-YORK SWALLOW-TAIL. The antennæ are long, the knobs at the extremity being remarkably large. The head, thorax, and abdomen, are black. None of this species have any palpi. The superior wings are of a fine light yellow, a little on the orange tint. The outer or fan edge has a border of black about a quarter of an inch broad; in which, near the edge, are eight spots of light yellow, one on each membrane. Adjoining to the upper or sector-edge, there are four large black spots; and that which is next the thorax, crossing the superior wing,

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extends downward through the inferior, growing narrower, and indeed losing itself in a misty point, as it approaches the abdominal corners. The inferior wings are of the same colour as the superior ones. On the bar-tendon in the middle of each wing there is a long angular black stroke. The outer or fan-edges have a border of black, almost three-quarters of an inch broad. Near the external edge of each wing, which is denticulated, there are four yellow crescent-like spots; and near the lower or abdominal corner, there is an eye-like spot, the supposed centre of which is red surrounded with black; over which there is an arc-like mark of blue, concentric with the red spot. The tails at the lower parts of the wings are nearly three-quarters of an inch long.

The expansion of the wings is four inches and a quarter.

The New-York Swallow-Tail is nearly similar to that we have in England; and is found in several parts of the West Indies, as well as North America.

Fig. 7. GRAYLINE; the SEMELE, Nymphales, of Linnæus. The head, thorax, and abdomen, together with the whole upper-side, are of a fine olive-brown; but, on the fan-membranes, towards the outer edge, there are several dashes of a light or pale clay-colour; and in two of these on each wing is a round black spot, with a white speck in the centre, appearing like eyes. The inferior wings have also these light markings, but they are there in the form of the blade of a trowel, and of an orange-colour. Near the abdominal corner there is another eye-like spot, but of an orange-colour, having a black speck in the centre; and in the middle of this speck there is a small white one.

Fig. 8. Under-side. The head and thorax are brown. The superior wings are of a bright, though pale, orange clay-colour; one-half is clouded with orange clay-colour, and has the two eye-like spots as in the upper-side. The inferior wings next the abdomen are half-way covered with a cloud of dirty brown, brindled with small strokes of black; the other half is of a pale ash-colour, brindled all over with the same sort of minute black streaks.

The expansion of the wings is two inches and a half.

The caterpillar, which feeds on grass, changes to a chrysalis towards the end of June, and the fly comes forth the end of July. It delights in woods, and flies very low.

Fig. 9. AMERICAN ZEBRA; the CHARITHONIA, Heliconii, of Linnæus. The head and thorax are black, spotted with yellow. The abdomen is black on the upper-side, but yellow beneath. The superior wings are of a warm brownish-black, on each of which are three bold bands or bars of yellow: the first of these bars takes its rise from the shoulder, and keeping parallel with the lower or slip-edge, ends a little above the lower-corner; the second begins about the middle of the upper or sector edge, and approaches the middle of the outer or fan-edge; and the third crosses the wing near the tip or apex in a concentric curve. The inferior wings are of the same brownish black, having a broad yellow bar, which reaches quite across from the outer corner of one wing to the other.

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This stripe is quite close to the lower edge of the upper wing all the way; and beneath it is a stripe or chain of yellow spots running parallel with the upper one, and at equal distances from each other, with such regularity as to appear like a necklace. In this line there are sixteen spots on each wing; and near the edge below there are eight more. The expansion of the wings is three inches and a half.

Fig. 10. SMALL GATE-KEEPER; the PAMPHILIUS, Plebeii, of Linnæus. The head, thorax, and abdomen, are black. The wings are all of a light orange clay-colour, bordered with a misty brown; the superior ones have a small black speck near the tips; and each wing is fringed with white.

Fig. 11. *Under-side*. The superior wings are finer and deeper in colour than on the upper-side; the eye near the tip is remarkably lively, having a small white speck in the centre of a black spot, which is again encircled with a ring of yellow. The inferior wings are of a greyish clay-colour, except the upper-part next the thorax, which appears to be one entire cloud of dusky brown.

The expansion of the wings is one inch and a quarter.

The caterpillar feeds on grass; and the fly, which appears at the end of April, or in the month of June, generally plays among the grass, and never flies high.

PLATE THE THIRD.

Fig. 1. GREEN-VEINED WHITE; the NAPI, Danaï, of Linnæus. The antennæ are speckled from the head to the knobs. The head and thorax appear black, covered with a greyish hair; but, near the neck, they are yellowish. The abdomen is black, and powdered with white specks. The wings are of a lovely soft greenish white; and the tendons are very visible, appearing like so many hair-strokes. The tips of the superior wing are black for about a quarter of an inch, between which and the lower or slip-edge there are two black spots. The inferior wings have only one spot, which is on the upper-edge, a little above the outer corner, and generally concealed by the lower edge of the superior wing.

Fig. 2. *Under-side*. The eyes are of a dark brown, nearly approaching to black. The palpi, legs, breast, and the whole of the under-wings, together with the tips of the superior ones, are of a fine bright greenish-yellow. The superior wings have two black spots, as on the upper-side; and the tendons of the inferior ones seem edged or bordered with dust-like specks.

The expansion of the wings is two inches.

This is the description of the female; the male has only one black spot, exclusive of the black tip.

The caterpillar, which is green, feeds chiefly on cabbage; it changes to the chrysalis in September, and the fly appears about the middle of May. It breeds in gardens, but roves over commons, woods, fields of wheat, &c. and is frequently met with even in towns.

Fig. 3. CYANE, or ZIGZAG. The head, thorax, and abdomen, are of a dark brown. The ground of the superior wings is black, but of an orange-brown towards the thorax, with a long dash of

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light blue down the long tendon, which is the second from the slip or lower-edge. About half way there is a broad, irregular, whitish, or cream-coloured bar, which crosses the wing to within a quarter of an inch of the fan-edge. The under-wings are of a milky or cream-coloured white, having three rows of black spots crossing the wings from side to side, parallel to each other, amounting to about twenty-one in each wing. They are all bordered with a band of black, which is about a quarter of an inch broad, ornamented with a beautiful zigzag line; and which, taking its beginning from the tip or apex of one of the superior wings, continues along round the borders of all the four wings till it reaches the tip of the other superior one.

Fig. 4. *Under-side*. The under-side has a broad zigzag border, similar to that of the upper, but a little narrower in the under-wings. The general ground of the four wings is a kind of cream-colour; the inferior wing being spotted similar to the upper-side, pretty large, and crowded near the thorax, where the ground is blue, as it is on the table-tendon, or upper-edge. The superior wing is ornamented with black spots or clouds of various forms. There are four remarkable round or oval ones near the outward border; and those which seem to crowd near the shoulders are ornamented with blue and red, which separate or surround them, not easy to be described. The legs are white; and the thorax is of a dark brown, having two black marks on each side.

The expansion of the wings is three inches and three-quarters.

This fly came from Siam, in the East Indies.

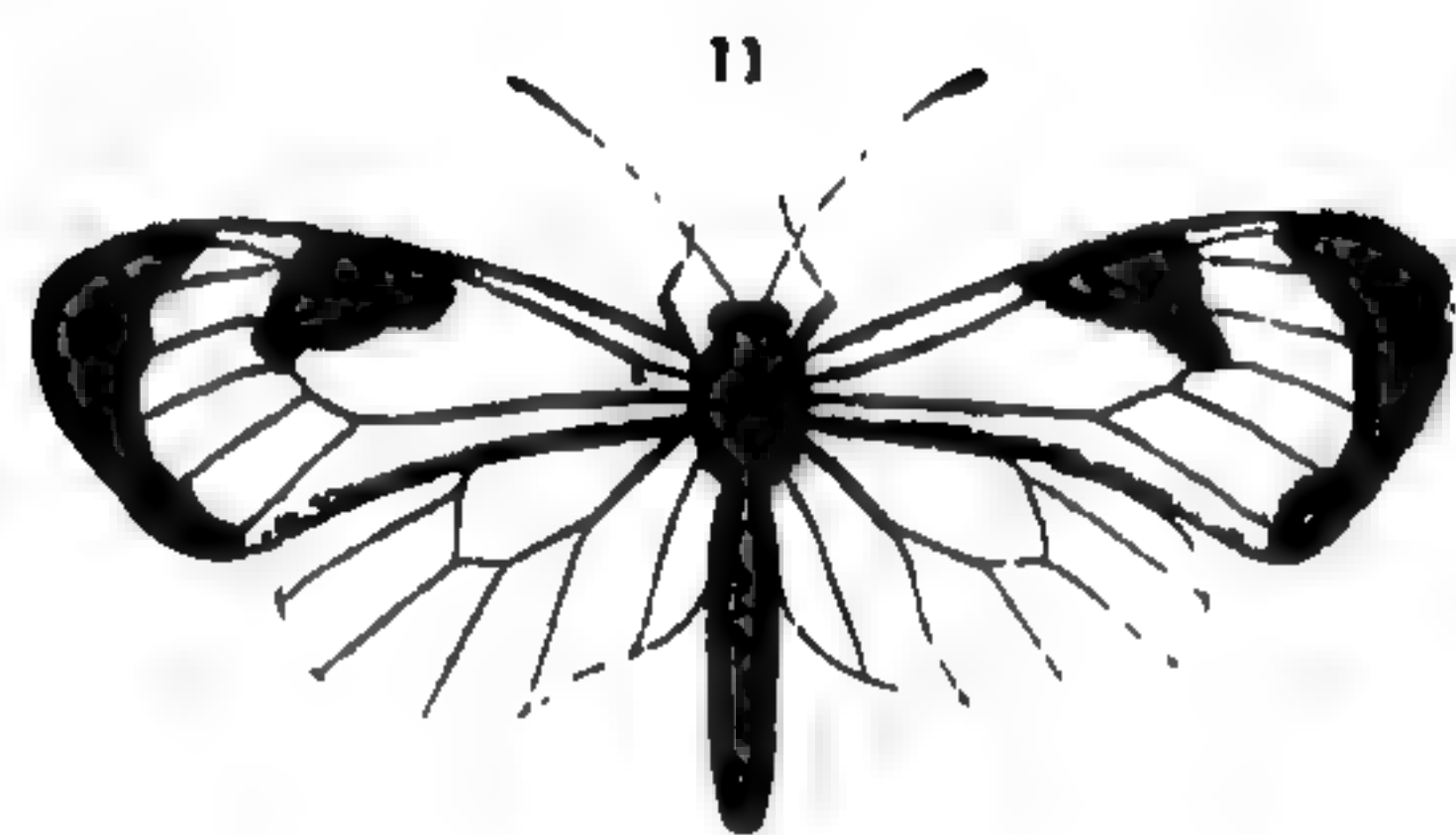
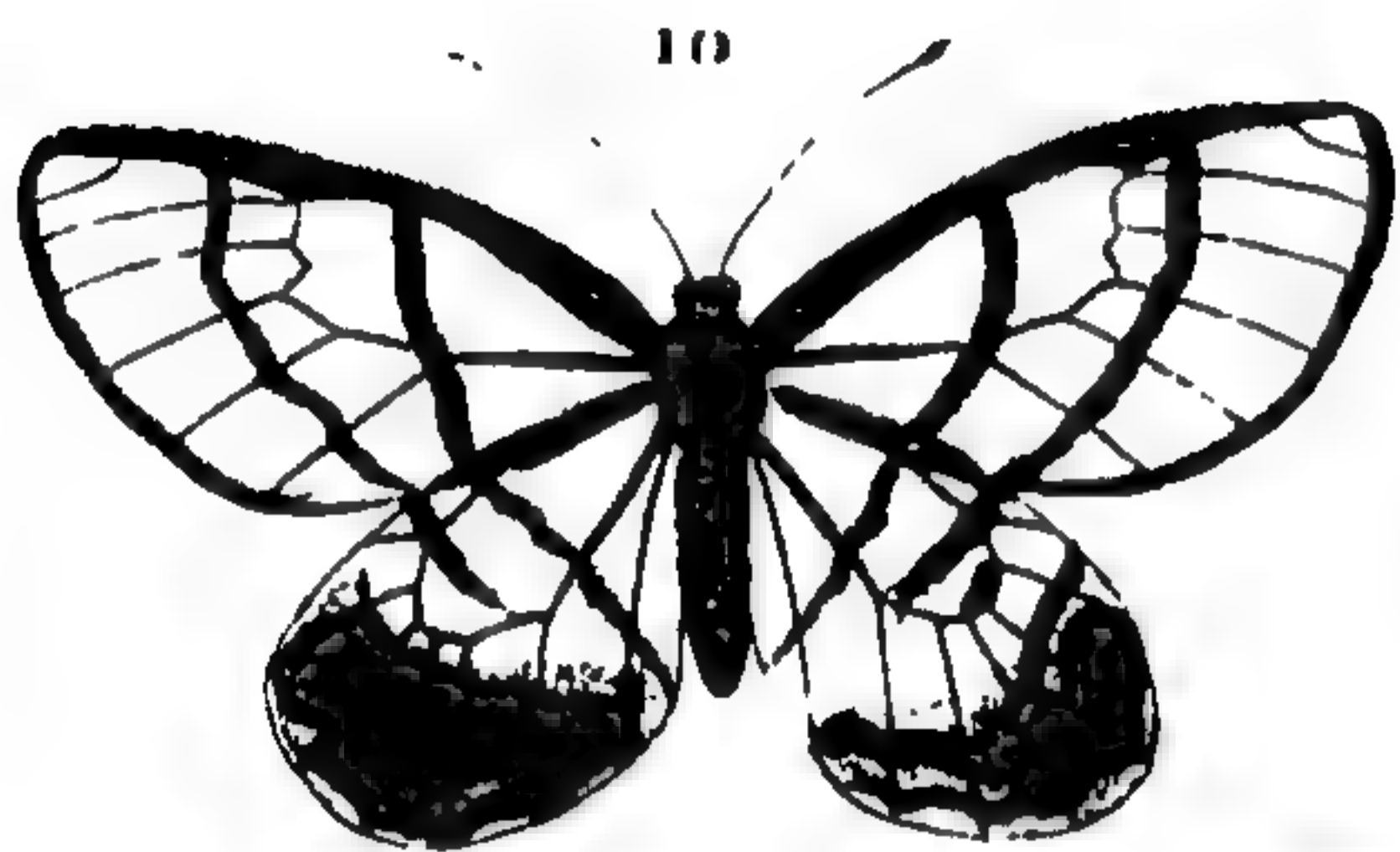
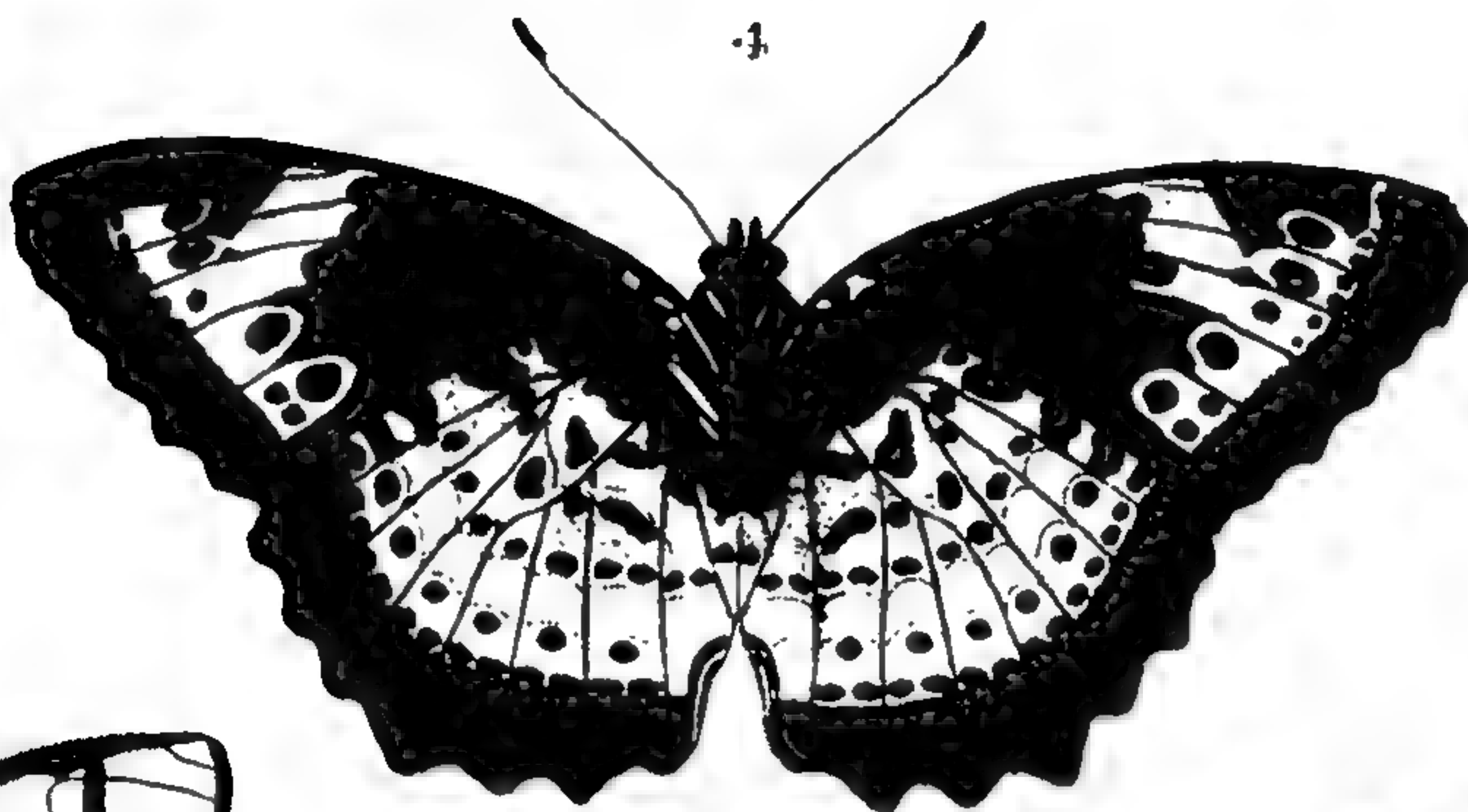
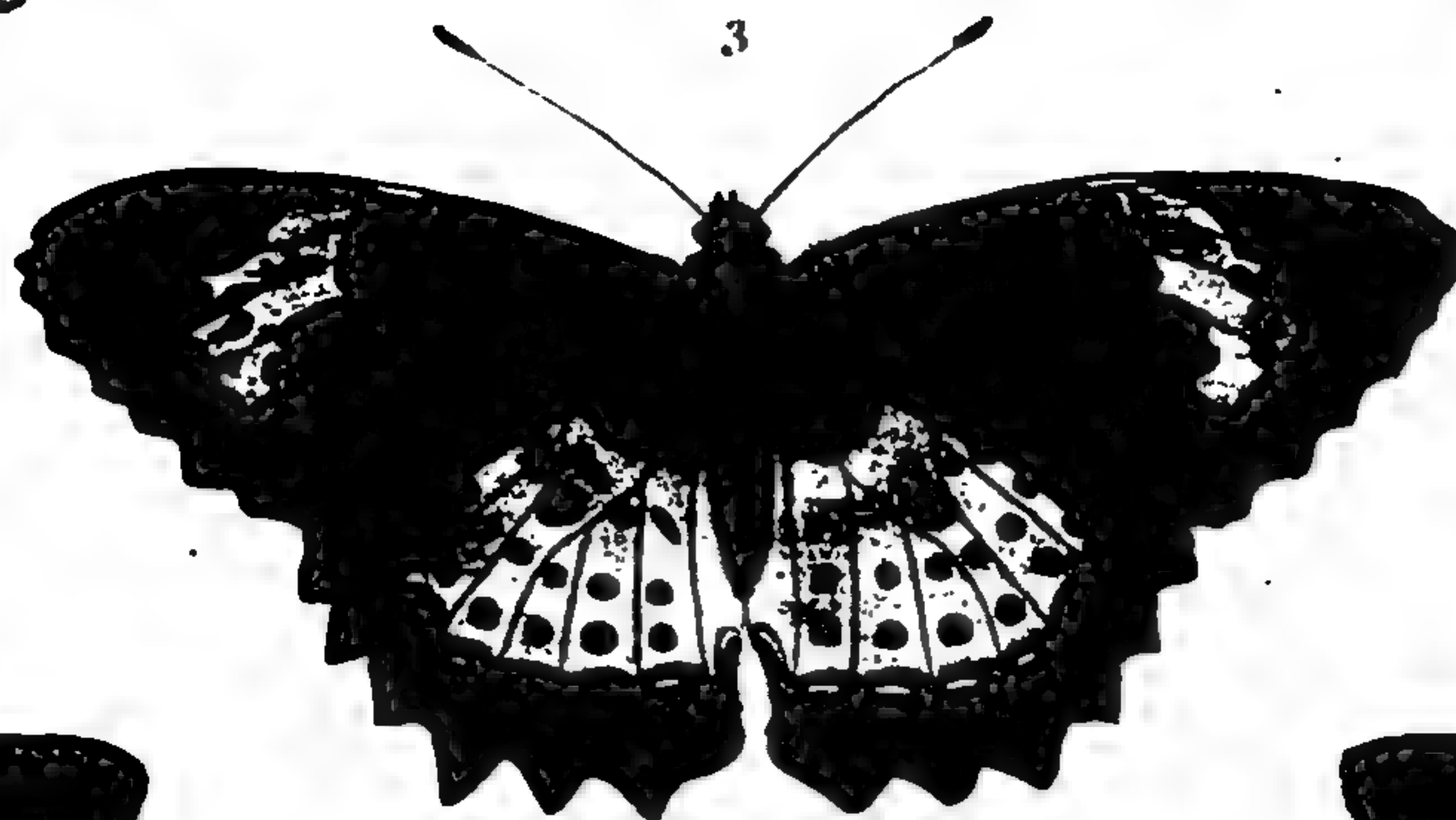
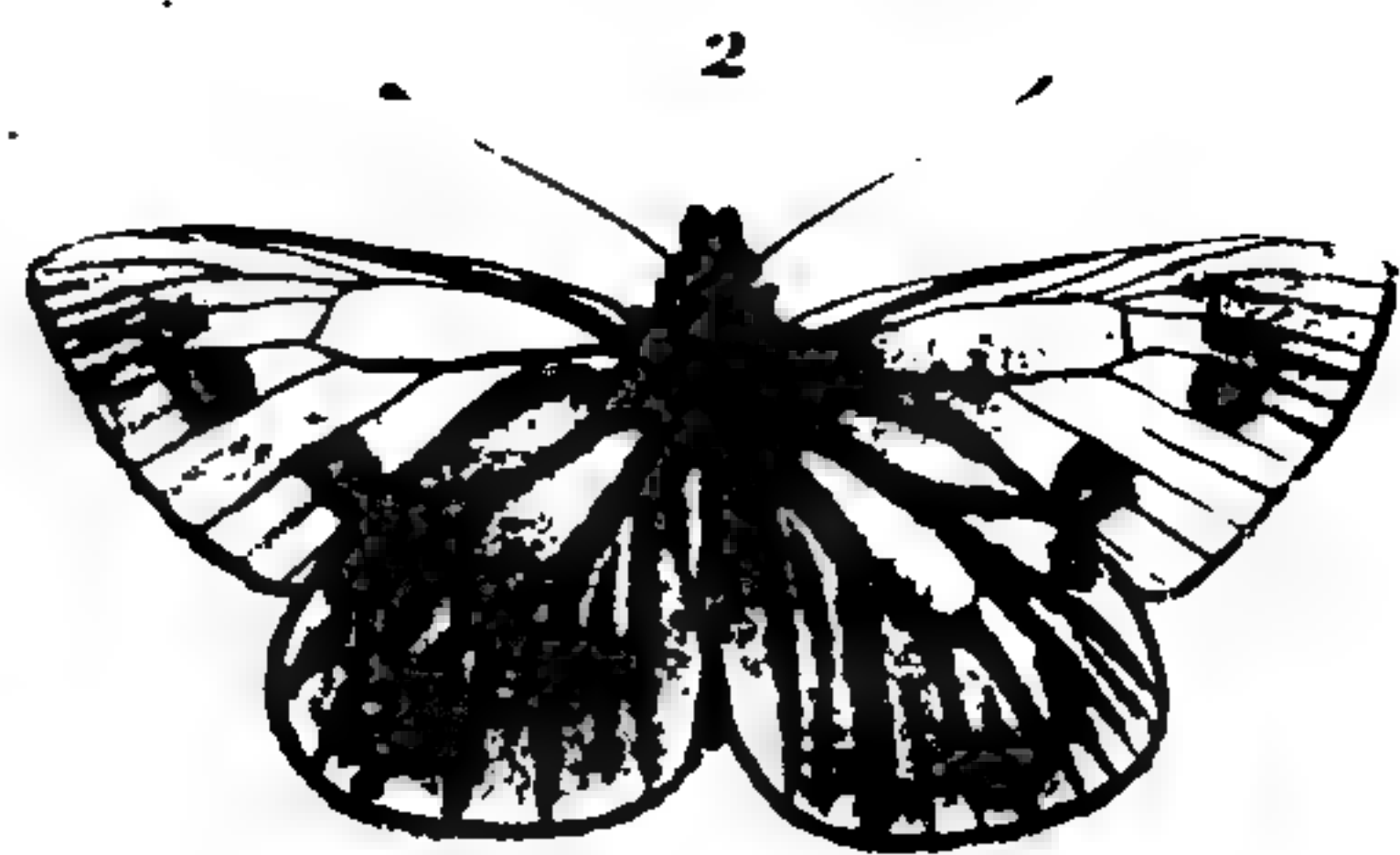
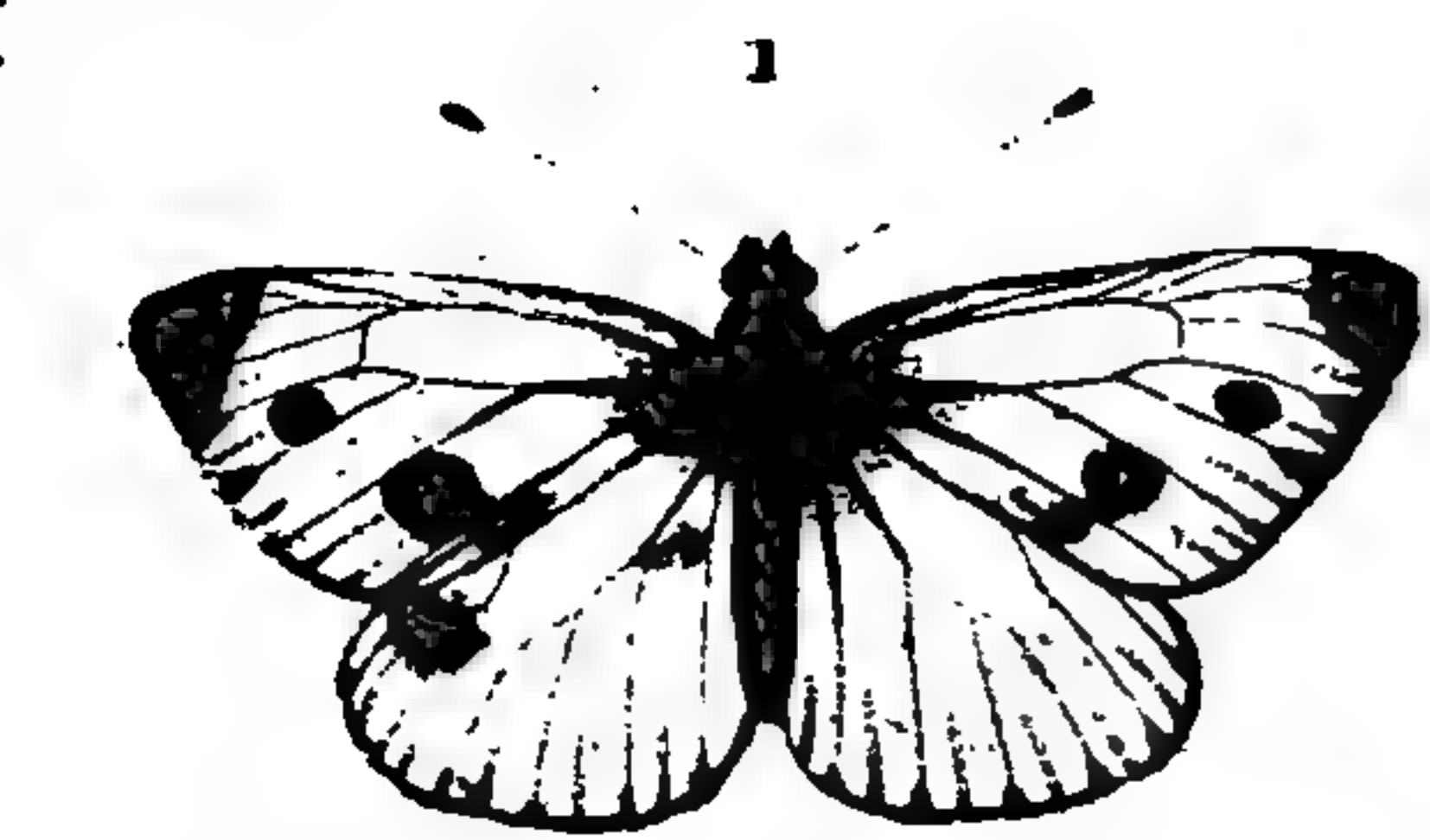
Fig. 5. HIGH BROWN FRITILLARIA; the ADIPE, Nymphales, of Linnæus. The antennæ are pretty long, and almost round; the eyes are large, and of a deep red-brown; the thorax and abdomen are of a dark brown, covered with brown hair of a greenish gloss. The wings are all of a yellow-brown orange-colour, prettily bordered with a double black line on the fan-edges all round; above which, in each membrane, there is a spot in the form of a crescent, which compleats the agreeable uniformity of the border. The other parts of the wings are spotted all over with black of various forms, not easily to be described; but many of them are round, and not so large as a hemp-seed.

Fig. 6. *Under-side*. The under-side is much like the upper, but has no double line in the border. The thorax, as well as the legs, are of a yellow orange-brown, with a greenish gloss. The inferior wings are of a fine golden yellow, ornamented with about two and twenty spangles, shining like silver or mother-of-pearl; and a few others are also seen on the tips of the superior wings, but considerably less, and only about six in number.

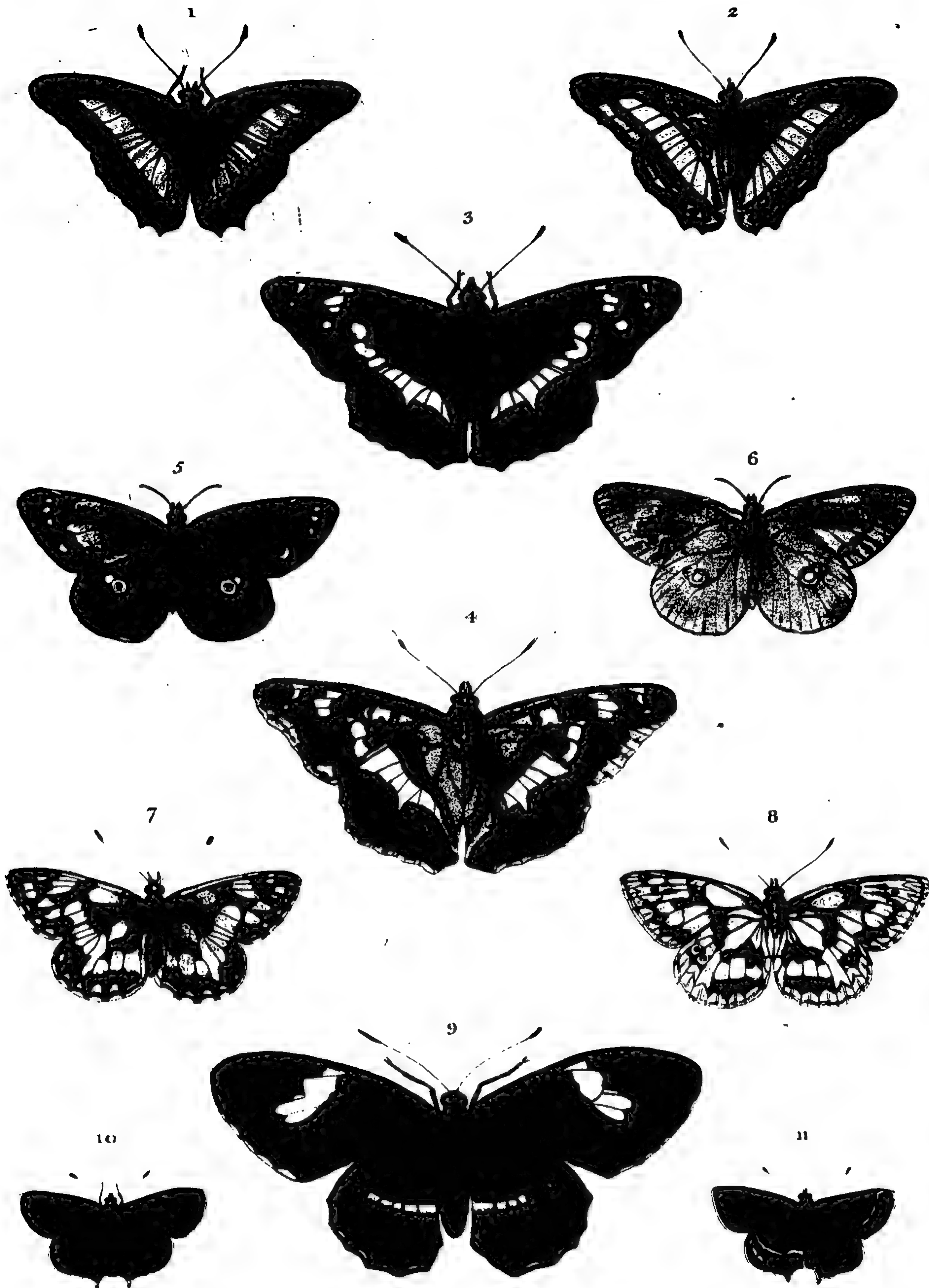
The expansion of the wings is two inches and a half. The caterpillar, which is of the bristly sort, feeds on the violet. It changes to the chrysalis about the end of May, and the fly appears in plenty at the latter end of June. It flies in or near woods, and is very strong, bold, and rapid in flight.

The insect above described is a male, and may be known by the thickness and blackness of the first and second fan-tendons, which are loaded with hair rising high on each side, so as to form a ridge at the top.

Fig. 7.



BUTTERFLIES. Plate III.



BUTTERFLIES, Plate IV.

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Fig. 7. **FRITTILLARIA, PEARL-BORDERED**; the **EUPHROSYNÉ**, Nymphales, of Linnaeus. The antennæ of this fly are full as large as those of the High Brown Fritillaria, and very like them in form. The entire upper-side is of a fine warm yellow-orange. The fan-edge, close to the fringe, is one continued chain of triangular spots, which unite in a string along the outer edge of each wing, and another line of the same triangular spots just above composes an uniform border. Within the wing, on the fan-membranes, about the eighth of an inch, is another row of round spots, one on each membrane: on the superior wing are seven, and on each of the inferior ones six only. Those parts of the wings which are next the thorax and abdomen, are occupied by a great variety of multiform spots of black.

Fig. 8. *Under-side*. The under-side is yellower and much paler than the upper. The black spots near the fan-edges are so faint as hardly to be seen. The thorax is clouded with dark orange-red; and there are seven silver or pearl-coloured spangles along the border or lower edge of the wing. In the very centre, on the table-tendon, is another spangle of an oblong form, not so big as a lint-feed; and there is also one nearly of a triangular form close under the thorax.

The expansion of the wings is two inches. The caterpillar changes to a chrysalis at the end of April; and the fly appears about the middle of May. It flies only in woods, or lanes in their vicinity, never being above a yard from the ground, on which it is fond of sitting, when undisturbed.

Fig. 9. **ORANGE DAPPLED**. The head, thorax, and abdomen, are black; the two former being full of small white spots. The superior wings are of an orange clay-colour; but the tips are black, softening off towards the middle of the wing: and this black part is filled with spots of a clear white; one, in particular, remarkably large, being at least half an inch long. However, as four of the tendons intersect this large spot, it seems as if divided, and has the appearance of five spots united together. A line or border of twelve white spots ornaments the fan-edge. The inferior wings are of the same colour as the superior ones, having four black specks in the middle, each joining to a tendon. The whole of the fan-edge is irregularly bordered with a narrow black edging, with a line of white specks, two in each membrane, as in the border of the upper.

The under-side is very similar, though not exactly like the upper.

The expansion of the wings is three inches.

It is found in New York, Maryland, and several parts of the West Indies. It flies very slow, and is fond of settling in shady and marshy places.

Fig. 10. The **PIERA, Heliconii**, of Linnaeus. The antennæ are like hairs; and the knobs, being thin, are hardly discernible. The head, thorax, and abdomen, are of a dark brown; of which colour also are the sector edges, the sector tendons, and membranes; and the fan-edge is tinged with brown. The superior wings are transparent like gold-beaters skin, or thin horn, and have no farina upon them: they are divided into three equal parts by two

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brown bands; that next the thorax continuing downward through the inferior wing, and ending near the anus or lower end of the abdomen, on the edge of the abdominal membrane. The inferior wing is of the same transparent brown, except the lowermost half, which is tinged with rose or pink-colour. At the outer corner there is an ocellus, or small eye, about the size of a hemp-seed, which is formed by a gold-coloured ring, surrounding a black spot, in which (not in the middle, but towards the outer part next the corner of the wing) is a small white speck. A brown line seems to divide this part or corner of the ring from the rest. The bottom or fan-edges of these wings are bordered with a narrow crimson edging, above which, about the eighth of an inch, is another crimson line or band; but this last band, which is composed of united arches, does not extend so far, stopping at the eye near the outer corner.

The expansion of the wings is two inches and a quarter.

This fly comes from the West Indies, where it is seen flying in the month of May, about the shrubs and rushes in the savannahs.

Fig. 11. **ISINGLASS CLOUDED HELICONII**. The antennæ are like threads; and the head, thorax, and abdomen, are brown. All the wings have the transparency of glass. The superiors have each a large triangular spot near the middle of the sector, which extends its point a quarter of an inch towards the centre. The outer or fan-edges are bordered with a pale black band or edging; and the sector, as well as the lower or slip-edge, is brown. The inferior wings are quite clear, and free from markings.

The expansion of the wings is two inches.

This fly comes from Jamaica, where it frequents the savannahs in June.

PLATE THE FOURTH.

Fig. 1. **INDIAN WHITE-ADMIRABLE**; the **IPHICLA**, Nymphales, of Linnaeus. The eyes are brown, and the thorax and abdomen nearly black. The superior and inferior wings are of a fine olive black, with a greenish cast or gloss. At the tip of each of the superior wings there is a large orange-coloured spot, of an irregular shape, and above a quarter of an inch in diameter. From this part of the wing, and near this spot, rises a broad pearl-coloured bar, which forms a direct line; and, crossing the superior and inferior wings, ends near the abdominal corner, where it is stopped by a large spot of orange. There are some occult markings to be seen through the black part of the wings, which it is difficult, if not impossible, to describe.

Fig. 2. *Under-side*. The palpi and thorax are white, and the legs are of a dark brown. The wings in general are of a reddish purple, watered all over with reddish brown lines parallel to each other; this brown colour is pretty broad round the edges of the fine purple broad bar which extends across the two wings, as on the other side, but considerably stronger in colour.

The expansion of the wings is two inches and a half.

BUT

This fly, which is amazingly swift in flight, is fond of settling on the ground in a shady place; and will permit you to come pretty near it, when it darts off with such velocity, that the best eyes cannot discover the course it takes. It is common both in North and South America.

Fig. 3. **PURPLE EMPEROR**; the *IRIS*, *Nymphales*, of Linnæus. The antennæ are black, having a little brown speck on the extremity of each. The head, thorax, and abdomen, are brown, but covered with fine hair of a dark but glossy ash-colour. The superior and inferior wings are very dark near the margins or fan-edges, but all the other parts are changeable, according to the different lights in which this beautiful insect is viewed. Sometimes it appears of a sooty black; and, at others, the eye is suddenly dazzled with a resplendent glow of vivid purple: so that, by frequently turning the fly into different positions, the colours play and shift through all the gradations, from a sooty black to the most brilliant purple, in such a manner as undescribably to charm the eye with a delightful and amazing variety. The borders of the wings are ornamented with a row or line of misty orange spots; and, towards the abdominal corners of the inferior wings, there are two eye-like spots, one on each, which consist of a round black spot with a small speck of white in the middle, the black one being encircled with a gold-coloured ring. The superior wings have each a number of white spots; three of which, extending from the middle to the lower or slip-edge, seem to join another band that crosses the inferior wing, and reaches to that part which is nearest the anus, or end of the abdomen.

Fig. 4. *Under-side*. The eyes appear of a red brown, having a white streak under each. The palpi are white; and the thorax, as well as the eyes, are of a bluish or ash colour. The white spots are very similar to those on the upper-side; but the field or ground-colour is of a reddish brown, variegated with black and orange. The table-membrane is of a pale blossom-colour, with two spots of black. Towards the lower corner of the wing, there is a large orange-coloured spot about three eighths of an inch in diameter, the centre of which has a black ring, and within that there is another of purple. The inferior wings are of a dull pearl-colour near the body or thorax, as well as on the outer edge; but, near the white bar or band which crosses the middle, it is of a blood-red brown. The eye on the upper-side near the abdominal corners appears very faintly on this side.

The expansion of the wings is three inches.

The caterpillar, which feeds on fallow, is of a green colour, and has two horns on it's head, like a snail or slug. It is in the caterpillar state during the winter, changes into a chrysalis, hanging by it's tail on the under-side of a leaf in the spring, and the fly appears about the end of June. It flies very high; and sports round the tops of oak and ash trees, where it often settles on a leaf; and, on seeing any small fly, or other insect, pass by, immediately pursues it a little way, when it goes round the top of the tree, and is sure to settle again on the same leaf.

BUT

The female is like the male in every respect, except that it has not the beautiful purple hue on the upper side.

Fig. 5. **CLOUDED YELLOW**; the *HYALE*, *Danaï*, of Linnæus. The antennæ are reddish, and so are the head and shoulder parts of the superior wings. These wings are of a cream colour, having a round black spot in the middle. Each fan-edge and tip is covered with a broad irregular black border, which at the tip is half an inch wide. In this border are two or three cream-coloured spots nearly in the form of a heart, and the fringe at the edges is red. The inferior wings are of a dismal greyish ash-colour, having a double orange-coloured spot in the middle. The abdominal groove is of a greenish yellow, and the fan-edges at and near the outer corner of the wings are clouded with black. The thorax and abdomen are black, but thinly clothed with yellowish hair.

Fig. 6. *Under-side*. The eyes are black; the palpi are yellow, but reddish at their extremities; and the legs are also red. The superior wings are yellow, but palest near the middle parts. Within about a quarter of an inch of the fan-edge there is a row of black spots, three of the lower ones being large and conspicuous, and the lowest of the same size as that in the middle of the wing on the bar tendon, which is about the bigness of a small hemp-seed. The inferior wings are of a dirty or greyish yellow; in each of which, on the bar tendon, are two spots in double rings of red, close together, the central parts of which appear like reddish pearl, a little inclining to blossom-colour. The fringes of the wings, as well as the sector-edges of both wings, superior and inferior, are red.

The expansion of the wings is two inches and a quarter.

It flies in the middle of August; is very fond of meadows, and particularly attached to fields of clover.

Fig. 7. **MARbled-WHITE**; the *GALATHEA*, *Nymphales*, of Linnæus. The head, thorax, and abdomen, are black, but covered with whitish hair. The superior and inferior wings are of a greenish cream-colour, tessellated or chequered all over with multiform black spots: round the borders of each wing, near the fan-edge, is a line or chain of six white spots; those on the inferior wing, in particular, being somewhat in the form of a heart. The fringes are white. On the lower part of each wing, near the abdominal corner, there are three eye-like rings of white, with a white speck in the middle of each.

Fig. 8. *Under-side*. The palpi are white, edged with black; the wings are the same colour as on the upper-side, only that they shew the outlines of the markings on this, except in the middle of the superior wing, which is black, the inferior ones being dusky. A small eye is seen near the tip of the superior wing, and there are two more eyes near the outer corner, as well as four in a line near the abdominal corner of each of the inferior wings.

The expansion of the wings is two inches.

The caterpillar, which feeds on grass, changes into the chrysalis in May, and the fly generally appears about the 6th of June.

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It is very common in grass fields by the sides of woods and hills, sometimes ten or a dozen playing together, and now and then taking a flight all together till they are quite out of sight.

Fig. 9. **WHITE-SPOT SWALLOW-TAIL**; the *ANCHISES*, Equites, of Linnæus. The eyes, thorax, and abdomen, are black. The superior wings are of a fine brownish black, having one large white spot in the middle, which begins about the middle of the upper or sector edge, crosses the end of the table-tendon, and (entering some way into the second and third fan-membranes) ends within half an inch of the fan-edge. This spot is a quarter of an inch wide, and near an inch long. The inferior wings are also of a brownish black, having a broad band of red on each wing in a right line with each other, and crossing the abdomen at right-angles. This bar, which is about half an inch wide, and near an inch long, lies within a quarter of an inch of the lower or fan-edge. It seems by the tendons to be divided into five parts; and each part being round at the bottom, the whole forms a pleasing scallop. At the end of this bar, near the outer corner, is a small speck of red. The under-side is precisely the same as the upper, except the body, which is black, embellished with twelve deep crimson-scarlet spots; two under the eyes, one on each side the bottom of the thorax, and eight on the abdomen, placed in pairs.

The expansion of the wings is three inches and three-quarters.

The caterpillar feeds on the orange-trees in almost all parts of America, especially in the island of Jamaica. The fly, which is exceedingly swift, frequents shady places, and is not easily followed by the human eye.

Fig. 10. **PURPLE HAIRSTREAK**; the *QUERCUS*, Plebeii, of Linnæus. The antennæ are very straight, and spotted with specks of white from one end to the other. The eyes are black; the head, thorax, and abdomen, are likewise black, but clothed with lead-coloured hair. The wings, both superior and inferior, are of a fine black, except that half of the superior one next the thorax, which is of a most brilliant and beautiful blue. At the bottom of the inferior wings, near the abdominal corner, there are two short tails, each about the eighth of an inch long.

Fig. 11. *Under-side*. The under-side is of a lead-colour. The superior wing has a white line crossing the fan-membranes, through the wing, and reaching from the sector-edge to the slip or bottom-edge, parallel to the outer or fan-edge, at the distance of about a quarter of an inch. Between this line and the outer-edge there are two bright orange-coloured spots. The inferior wing has a similar line, but at a greater distance from the fan-edge, and so as to admit of three orange-coloured spots near the abdominal corner, each having a small black speck in the centre. These spots are in a line, and the line is continued by four other similar spots extending to the outer corner of the wing.

This is the description of the male: but the

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female is like the male in almost every respect, except that she is larger, and her upper-side is all of a fine deep blue, duller or brighter according to the position in which she is seen.

The expansion of the wings is one inch and a half.

The caterpillar, which feeds on oak, changes into a chrysalis the beginning of June, and the fly comes forth about the middle of July. It is only to be found in or near woods, and is fond of playing with its companions round small oaks.

It may not be improper to add, that the wings of the smallest of the Papillio or Butterfly tribe are not more than half an inch from tip to tip; while those of the largest, called by Marian the Great Atlas, have an expansion of at least ten inches.

BUTTERFLY FISH. This fish, which is caught in the Adriatic Gulph in the winter season, is about eight inches long, has a thick head, but becomes very slender towards the tail. The colour is of a light blue, or ash, with olive or dirty green stripes. The eyes are pretty large, and placed near each other on the top of the head; and, above each eye, some of these fishes have a minute fin. The fore-teeth are long and round, placed near each other, and very regular. The back fin rises very high; and near the top of the fifth ray there is a very beautiful spot resembling an eye, surrounded with a white ring, and ending at the eighth ray; by which mark this fish may be readily distinguished from all other species: this fin is variegated with a dirty green, or olive and blue, and irregular brown and white spots; and the belly is somewhat prominent, and destitute of scales.

BUTTERFLY SHELL. See *VOLUTA*.

BUZ. A fish caught in the German lakes, more commonly known by the name of albula.

BUZZARD. A rapacious bird of the long-winged hawk kind, belonging to the genus of falcon in the Linnæan system, of which there are several species.

BUZZARD, COMMON. The length of this species is twenty-two inches, and the full expansion of its wings fifty and upwards. It is the most common of all birds of the hawk kind in England. It breeds in extensive woods, generally fixing on the old nest of a crow, which it enlarges, and lines with wool and other soft materials. It lays two or three eggs, which are sometimes wholly white, and at others spotted with yellow: and when the female happens to be killed during the time of incubation, the cock hatches and rears the brood. The young consort with the old ones for some little time after they quit the nest, which is not usual with other birds of prey, if we except the butcher-birds.

The Common Buzzard is very sluggish and inactive, and much less on the wing than other hawks, remaining perched on the same bough for the greatest part of the day, and always found near the same place. It feeds on birds, rabbits, moles, and mice; and will likewise, in cases of necessity, devour frogs, earth-worms, and all sorts of insects.

The colour of this bird is subject to considerable variations. In some, the breast and belly are brown, and only marked across the crop with a

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large white crescent: usually, however, the breast is of a yellowish white, spotted with oblong ferruginous spots, pointing downwards; the chin is likewise ferruginous; the back of the head, the neck, and the coverts of the wings, are of a deep brown, edged with a pale rush-colour; the scapular feathers are brown, but become white towards their roots; the middle of the back is covered only with a thick white down; the extremities of the quill-feathers are dusky, their lower exterior sides being cinereous, and their interior blotched with darker and lighter shades of the same colour. The tail is barred with black and ash colour, and sometimes with ferruginous; the bar next the extreme tip is black, and the broadest of all; the tip itself is of a dusky white; and the irides are white, tinged with red.

BUZZARD, HONEY. This species is nearly of the same size as the former. The bill, and the membrane at the beak called the cere, are black, the latter being much wrinkled; the irides are of a fine yellow; and the crown of the head is ash-coloured. The neck, back, scapulars, and covert-feathers of the wings, are of a deep brown; the chin is white; the breast and belly are of the same colour, marked with dusky spots pointing downwards; the tail is long, of a dull brown colour, and marked with three broad dusky bars, between each of which there are two or three of the same colour, but more narrow; the legs are short, strong, and thick; and the claws are large and black.

This bird generally lays two eggs, blotched over with a fainter and a deeper red. It builds its nest of small twigs, which it covers with wool. It feeds on insects, bees, wasps, and some sorts of reptiles; and runs very swiftly.

BUZZARD, MOOR. The colour of this species, on all parts of the body, is of a rusty brown, except the top of the head, which is of a whitish tawney. On the middle joint of the wings there is a reddish clay-coloured spot, resembling that on the head; and there are dark-coloured dun feathers on the rump. The tail is of a dark yellowish, or light brown colour, and about eight or nine inches in length. The legs are about five inches long, of a yellow colour, and much more slender than those of other birds of this kind. The length of the Buzzard, from the tip of the beak to the end of the tail, is a foot and a half; and the wings, when extended, measure four feet. The eyes are of a proportionable size, and their irides of a saffron colour. The legs are covered with feathers a little below the knees; and the general conformation of the bird is more long and slender than that of other birds of prey.

The Moor Buzzard never soars like other hawks, but commonly sits on the ground, or on small bushes. It forms its nest either in the midst of a tuft of grass, or amongst rushes; lays three eggs; is extremely fierce and voracious, preying on rabbits, young wild ducks, and other water-fowl; and, like the osprey, feeds on fish. It generally frequents heaths and barren moors, from whence it has received its name.

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BUZZARD, BALD, called by some naturalists the Sea-eagle. This species differs from the common Buzzard, in being white on the back part of the head, in exceeding it both in size and weight, in the length of its wings, in the extreme flexibility of the exterior toe, in having angular processes on the upper mandible, and in preying on fish. The expansion of the wings is about five feet; the beak is short, black, and hooked; the tongue is broad, and soft; the eyes are yellow; the legs are long; and the feet are thick, strong, and of the colour of verdigris. It haunts rivers, pools, lakes, and the sea-shores; builds on the ground, among reeds; and lays three or four large white eggs of an exact oval figure.

BUZZARD, SPOTTED. This scarce species is about the size of the common Buzzard. The bill is black; the cere and legs are yellow; the crown and the hind part of the head are white, spotted with a light reddish brown; and the back and scapulars are of the same colour, edged with white. The quill-feathers are dusky, barred with cinereous; the underside of the neck, breast, belly, and thighs, are white, marked with a few rusty spots; the rump is white; the middle feathers of the tail are barred with white and deep brown, and the others with a lighter and darker brown.

BUZZARD, TURKEY, OF CATESBY. This species is somewhat larger than a wild-goose. The feathers are partly black, light, and grey; the beak is thick, crooked, and pointed; and the claws are sharp, and very strong. These birds can discover their prey at a vast height; and so very formidable are they, that if an ox lies down to rest, and a company of these voracious animals discover him, they immediately fall on, and devour him.

BUZZARD, ASH-COLOURED, OF EDWARDS. This bird is a native of Hudson's Bay, where it chiefly preys on the lagopus avis, or white partridge. The bill is of a blueish lead colour, covered with a skin of the same hue; the head and fore-part of the neck are covered with feathers having dark brown spots in their centres, and the rest are white; which intermixture has a very agreeable effect. The dark spots on the breast are larger than those on the head. The sides and belly are covered with dark brown feathers marked with roundish white spots; and the thighs are covered with soft, loose, white feathers, with long irregular dashes of dark brown down their shafts. The covert-feathers on the inferior side of the tail are transversely barred with black and white; and the whole upper side, neck, back, wings, and tail, are covered with brownish ash-coloured feathers, darker in their centres, and lighter towards their edges. The upper side of the tail is marked with narrow bars of a clay colour, the underside being ash-coloured, barred across with white. The legs and feet are of a blueish ash colour; the claws are black; and the fore parts of the legs are partly covered with dusky feathers.

BYRRHIUS. A genus of insects of the order of coleoptera, with clavated, almost solid, and compressed antennæ; of which naturalists enumerate five species.

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CABIAI, or CAPIBARA. An animal referred by some naturalists to the hog kind, on account of a very trivial resemblance between them; but which, if closely examined, will be found to differ in the most obvious particulars from that class of animals.

The Cabiai, with respect to the shape of its body and the coarseness of its hair, resembles a hog of two years old. Like it, the neck is short, and the back round and bristly; like it, too, this animal is fond of water and marshy places, and feeds indifferently on animal and vegetable food. On the other hand, the eyes are larger; and the snout, instead of being rounded as in the hog, is divided like that of the hare or rabbit, and furnished with thick strong whiskers; the mouth is more contracted; and the number and shape of the teeth are different, for it has no tusks. Like the peccary, another singular animal, the Cabiai is destitute of a tail; and, dissimilar to all others of this kind, instead of a cloven hoof, it is in a manner web-footed, and thus entirely adapted for an aquatic life. The fore-hoofs are divided into four parts, and those behind into three; and between the divisions there is a prolongation of the skin, so that the feet, when spread in swimming, are capable of beating a greater surface of water.

As the feet of this animal are thus constructed for the water, so it seems to delight entirely in that element; for which reason some naturalists have given it the name of the water-hog. It is a native of South America; and, like the otter, chiefly frequents the margins of lakes and rivers. It preys on fish, which it seizes with its hoofs and teeth, carries to the edge of the water, and feasts on at leisure; and it also devours fruits, corn, and sugar-canes. The legs being long and broad, it is often seen sitting on its haunches; and, when alarmed, its cry resembles the braying of an ass rather than the grunting of a hog. It seldom ventures from its retreat, except during the night, and then always in company: however, it never makes distant excursions; for, as its feet are ill-adapted to running, its only place of safety is the water, into which it plunges when pursued, and remains so long at the bottom as generally to tire the patience of the hunter.

Even in a state of native liberty, the Cabiai is a gentle animal; and, when young, is easily tamed: it will even answer to its name, and discover a fond attachment to the person who usually feeds it. The flesh of this creature is said to be fat and tender; but, from the nature of its food, it has a fishy taste. The head, however, is esteemed excellent; and in this respect it resembles the beaver, the fore-parts of which taste like flesh, and the hinder like the fish it feeds on.

CABILJAU. An African fish, of an ash-colour, covered with large scales, and marked down the back with a black list, which runs from the head to the tail. It grows to the length of about two feet and a half, and has very hard fins. The flesh is reckoned extremely nutritive.

CABILIAU. A name used by some naturalists to express the common cod-fish, the morhua and *asellus major* of naturalists.

CABOS. A species of eel-pout, which grows

to the length of two feet, and is very fat. The skin is extremely smooth, of a brownish colour, and destitute of scales; the snout is pale, spotted with black; and the head is short. The flesh of the Cabos is well-flavoured and wholesome.

CABOTE. A fish of the cuculus kind, more usually known among authors by the name of the corax.

CABURE. A Brazilian bird of the owl kind, about the size of a small thrush. The bill and irides are yellow; the legs are short, and covered with feathers; the claws are black; the tail is broad, and of the colour of faint umber waved with white. The entire upper part of the head, the back, and the wings, are likewise of the same colour spotted with white, the spots on the head and neck being very small, but those on the wings larger; and the breast and belly are white, variegated with spots of a dull brown. The Brazilians keep this bird tame, on account of its many diverting tricks.

CACABOGA. An American serpent, by some naturalists accounted the same with the tareiboia, or black water-snake, of that part of the world. It is, however, described by others as of a yellow colour, living near houses, and destroying abundance of poultry, though its bite is not fatal.

CACHALOT. A setaceous fish, having teeth in the lower jaw only; classed by Linnæus under the physeter.

This animal has generally been referred to the same class with the spermaceti whale; but the ingenious Pennant very properly makes a distinction between them. Naturalists enumerate seven varieties of this species; the principal of which are, the blunt-headed Cachalot, the round-headed Cachalot, and the high-finned Cachalot.

This tribe of fishes is of inferior dimensions to the whale properly so called, not being in general above sixty feet long, and sixteen in circumference. In consequence of their being more slender, they are considerably less unwieldy than the common whale; are capable of remaining longer at the bottom of the sea; and afford a smaller quantity of oil in proportion to their magnitude. Even in the common whale, the head makes a third part of the bulk; but in this species it constitutes at least one half. The tongue of the Cachalot is small; but the throat is so enormously wide as to be capable of admitting an ox entire. In the stomach of the whale scarcely any thing is to be found; but in that of the Cachalot there are frequently vast quantities of fish of different kinds; some whole, and others half-digested, some small, and others eight or nine feet long. The Cachalot is therefore as destructive among lesser fishes as the whale is harmless; and, at one gulp, can send a shoal of them down its enormous gullet. Linnæus informs us, that this animal is so formidable to dolphins and porpoises, as often to drive them on shore.

But how terrible soever this fish may be to its fellows of the deep, it is by far the most valuable and most desired by man, as it yields two very precious drugs, namely, spermaceti and ambergris. The use of these, either for the purposes of luxury or medicine, is so universal, that the capture of this animal, which alone supplies them, turns out to

very great advantage; particularly since the art has been discovered of converting all the oil of this creature, as well as the brain, into the substance called spermaceti.

This production, as it is naturally formed, is found in the head of the animal; and, in fact, is nothing else but the brain. The exterior skin of the head being stripped off, a covering of fat, about three inches thick, presents itself; under which, instead of a bony skull, the Cachalot has only another thick skin, which serves to cover and defend the brain; and the first cavity or chamber of the brain is filled with that spermaceti which is supposed of the greatest purity and the highest value. This cavity generally yields about seven barrels of the clearest spermaceti; which, when thrown on water, coagulates like cheese. Below this there is another chamber, exactly over the gullet, which is about seven feet high; and this also contains the same fluid, but of inferior value. It is distributed in this cavity like honey in a hive; in small cells, separated from each other by membranes like the interior skins of eggs. In proportion as the oily substance is drained from this part, it fills afresh from every part of the body; and from this is generally obtained about nine barrels of oil. Besides these, the spinal marrow, nearly as thick as a man's thigh, and which reaches all along the back-bone to the tail, where it becomes extremely small, affords no inconsiderable quantity of the same valuable substance.

Spermaceti, which is used in the composition of many medicines rather to give them consistence than efficacy, was originally sold at a very high price, both from the numerous virtues ascribed to it, and the small quantities that the Cachalot was deemed capable of supplying: at present, however, the price is greatly fallen, owing to its little efficacy in medicine, and the immense quantities now produced by a modern invention of converting the oil into spermaceti. This operation is performed by boiling it with a lee of potash, and hardening it after the manner of soap; and so plentiful is spermaceti now become, that candles are made of it, which are sold cheaper than those composed of wax.

The ambergris which is sometimes found in this species of whale was long considered as an heterogeneous substance, for which no origin could be assigned. But time, which reveals the secrets of nature, as well as the frauds of the interested, has discovered that it is chiefly derived from this animal. The name which is improperly given to the spermaceti, seems more justly to belong to this; for the ambergris is found in the place where the seminal vessels are usually situated in other animals. It is lodged in a bag three or four feet long, in round lumps, from one to twenty pounds weight, floating in a fluid somewhat thinner than oil, and of a yellowish colour: these bags never contain more than four of these balls; and one which weighed twenty pounds, and was the largest ever seen, was discovered single. The ambergris, however, is not found in all fishes of this kind, but chiefly in the oldest and strongest. Its uses in medicine, luxury, and perfumery, are well known; though its intrinsic value is small, and its qualities, perhaps, had better have remained unascertained.

CACHALOT, BLUNT-HEADED. This species is about fifty-four feet long; the greatest circumference below the eyes is thirty feet; and the superior jaw, which is five feet longer than the inferior, mea-

asures fifteen feet. The head is of an enormous size, extremely thick, and extends upwards of one-third of the whole length; the end of the upper jaw is quite blunt, and near nine feet high, at the extremity of which is the spout-hole. The teeth are arrayed in the lower jaw, twenty-three on each side, all pointing outwards; and in the upper jaw, opposite to them, there are an equal number of cavities, in which the ends of the teeth lodge when the mouth is shut. The eyes are very small, and remote from the nose. The pectoral fins are placed near the angle of the mouth, and measure about three feet in length; and, except a large protuberance on the middle of the back, there is no appearance of a fin. The tail is a little forked, and about fourteen feet from tip to tip. A fish of this kind was driven ashore on Cramond Isle, near Edinburgh, in December 1769.

CACHALOT, ROUND-HEADED. Upwards of a hundred of this species, of different sizes, were cast ashore at one time on one of the Orkney islands. The head was round; the aperture of the mouth was small; the teeth were an inch and three quarters long, and in their thickest places about the size of a man's thumb. There was no dorsal fin, the space being occupied by some cutaneous appendages.

CACHALOT, HIGH-FINNED. The spout-hole of this species is placed in front; and on the middle of the back there is a high fin, which that great naturalist Sir Robert Sibbald compares to the mizen-mast of a ship. The teeth are slightly incurvated, and near eight inches long. A fish of this kind was cast ashore on the Orkney Isles in the year 1687.

CADE-WORM. The English name for the phryganium, a common worm found in ditches, and used as a bait for fish. The fly produced from this worm has a long body, four brown wings, and a forked tail. About the month of August it is very frequently found on the surfaces of stagnant and other waters.

CÆCILIA. The name of a genus of serpents. The word Cæcilia is likewise used by some authors to express the fish more usually known by the name of the acus.

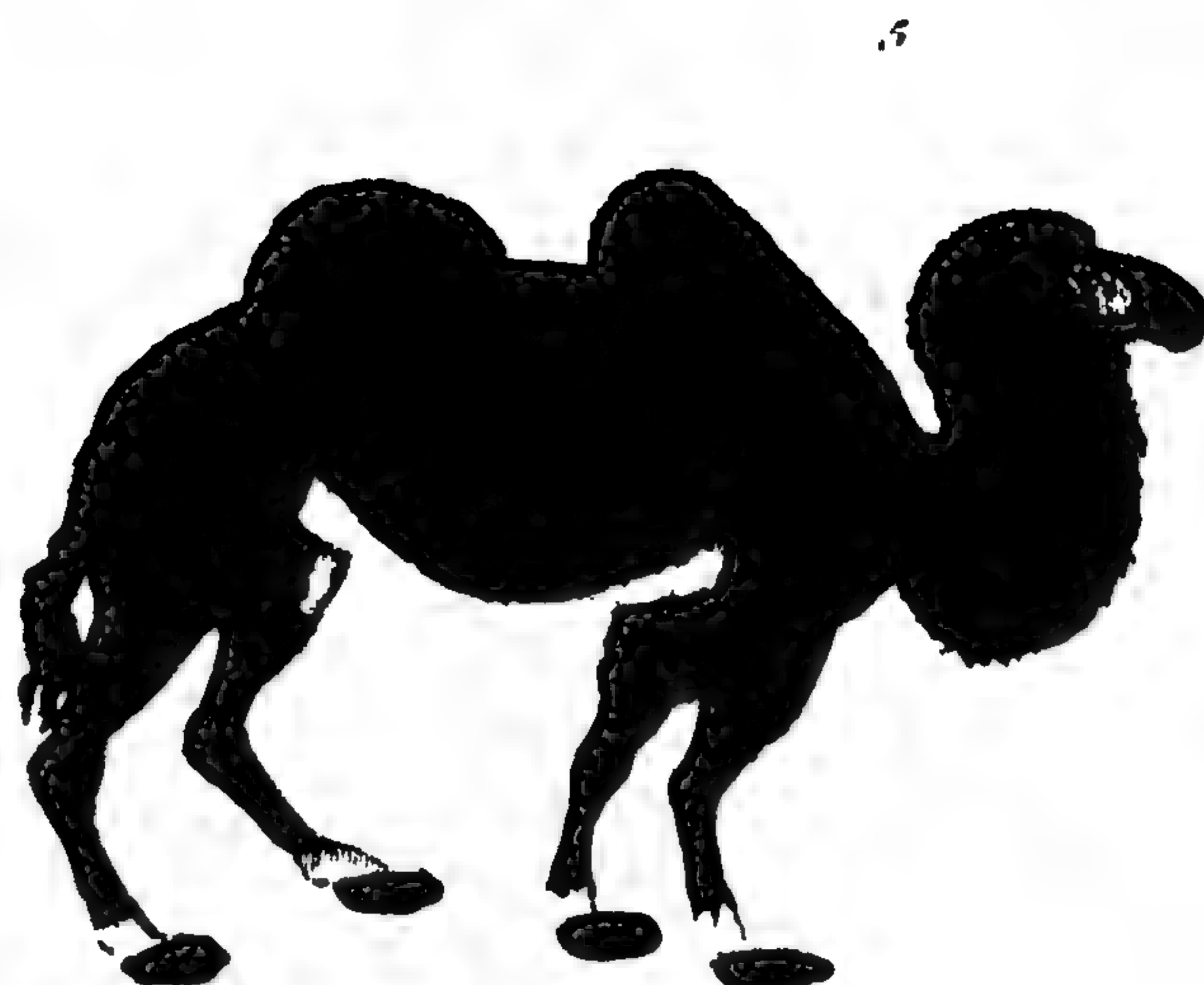
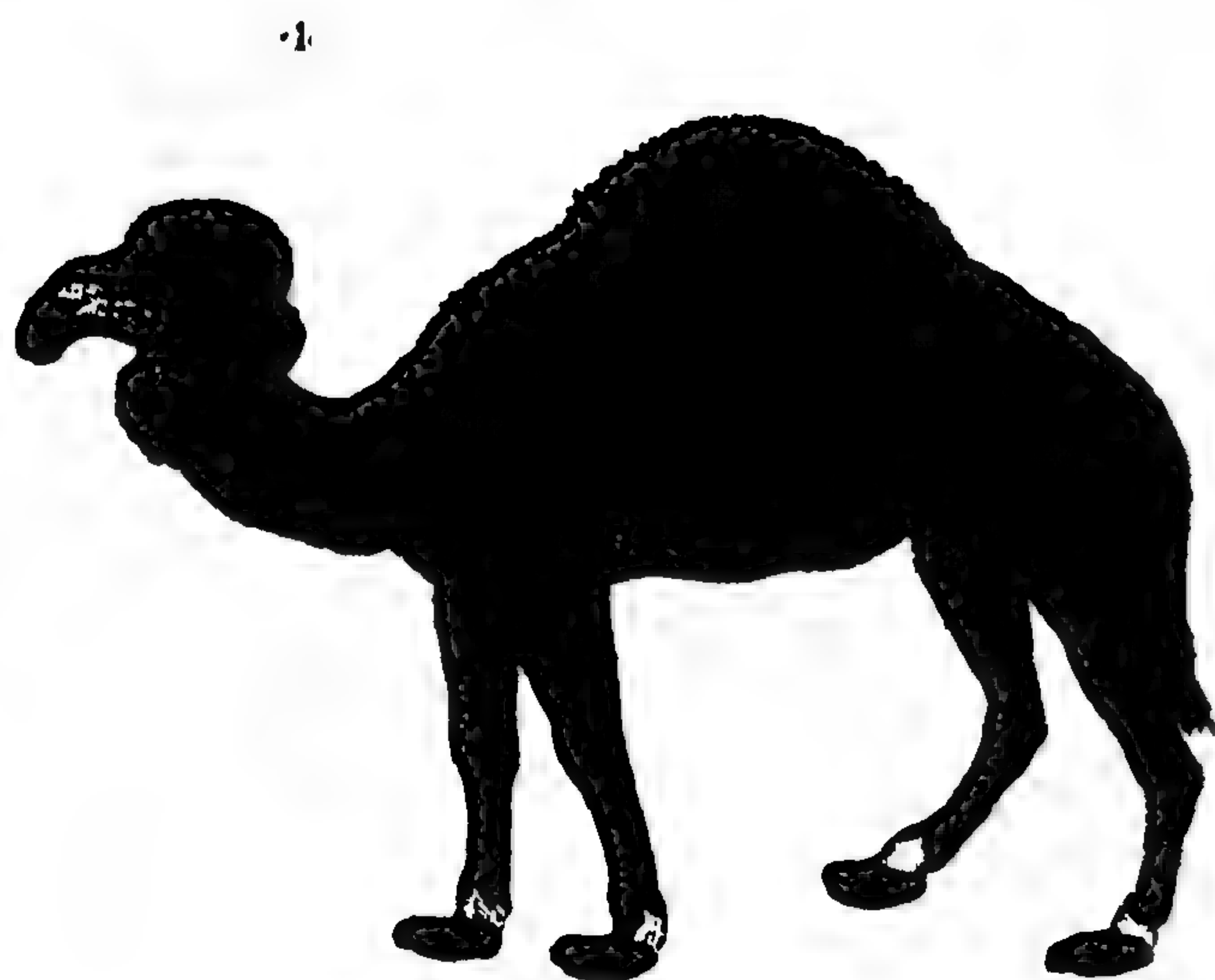
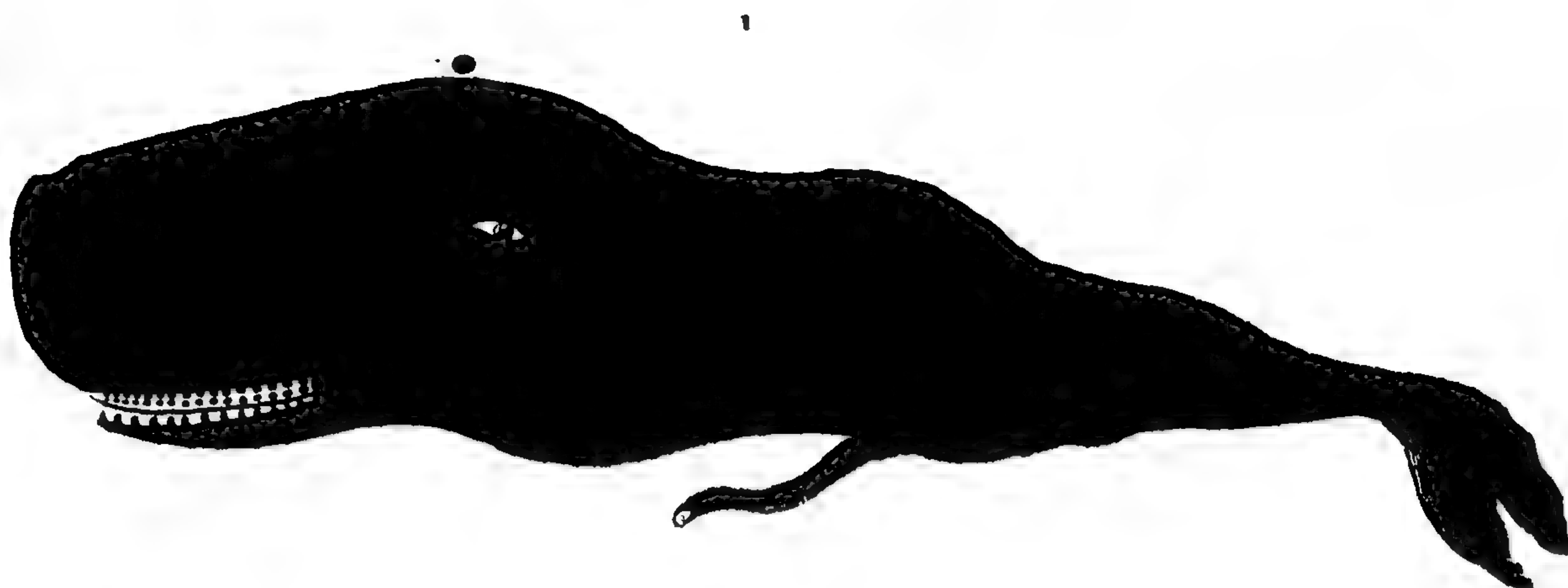
CÆRULEUS. A name given by some naturalists to a bird of the thrush kind, somewhat resembling that species of blackbird commonly called the solitary sparrow.

Cæruleus is likewise a name given by Solinus to the great Indian worm, described by Pliny and others as inhabiting the Ganges. It is extremely probable, however, that all the accounts handed down to us concerning this monstrous animal are only false descriptions of the crocodile.

CAGADO DE AGOA. A name given by the Portuguese to a species of American tortoise, usually known among authors by its Brazilian name jurua.

CAGADO DE TERRA. A species of American tortoise, so called by the Portuguese; but, by the Brazilians, jabori.

CAGAO. The Indian name for a large bird which inhabits the mountains, where it feeds on the pistachia nuts, and many other fruits; all which it swallows whole. It is extremely voracious, and its food passes off so quickly, that the pistachias only lose their rinds in its stomach; and although their pulpy coverings, the kernels and stones being voided entire. This bird is about the size of a common hen, but the neck is considerably longer.



1. BLUNT-HEADED CACHALOT. 2. CALANDRA. 3. CALAO. 4. ARABIAN CAMEL.
5. BACTRIAN CAMEL.

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CAGIT. The name of a species of parrot very common in the woods of the Philippine Islands. It is of a middling size, and entirely of a beautiful green colour.

CAGUI. A Brazilian monkey; of which there are two species, a greater and a lesser.

The greater Cagui, to which the name of pongi is given by the inhabitants of Congo, is a large animal, with ash-coloured hair mixed with a little black. The face is roundish, and somewhat resembles that of a lion; the ears are round, black, and destitute of hair; the eyes and mouth are likewise black; and the tail, which is near a foot and a half long, is covered with reddish hair.

CAGUI, LESSER. This tender little animal has the face of a lion: the body is no more than six inches long, and the tail ten; the head is about the size of an apple; the mouth is furnished with small sharp teeth; the ears are roundish, and encircled with fine smooth white hair; the tail is surrounded with white and dusky rings; and, except on the face, which is white, the creature has very little hair, and appears all over the body of a dark flesh-colour. The eyes are of a reddish hazel hue, with black pupils; and the general outlines of it's face resemble those of the monkey tribe. The paws are covered with short hair; and there are five toes on each foot, like those of a squirrel, with pointed claws, except on the two exterior toes of the hind-feet, which have flat nails.

This animal has a very shrill voice, is extremely active and sportive, and incapable of enduring a cold climate. It feeds on greens, fruit, insects, snails, and small fish.

The young, which are very ugly at first, cling close to the breast of the dam. When they grow a little bigger, they hang on her back, or shoulders, till she is weary, and then she finds means to dislodge them; on which the male immediately takes them under his protection till the female recovers.

CAILLO. A name given by some authors to the *lupus marinus*, or wolf-fish.

CAIRINA. An appellation by which several naturalists distinguish the Muscovy duck.

CAITAIA. A long-haired Brazilian monkey of a yellowish white colour. The head is roundish; the nose is small and flat; and the tail is held arch-ways. It smells of musk; and, if treated with severity, immediately sets up a loud cry, being extremely irascible. The Caitaia seems to be the same animal described by Clusius, as having been brought from Fernambuco, in Brazil; for he tells us that the body is large, with long shaggy hair of a flesh-colour, and that it smells very fragrantly of musk. There is another species of a deeper yellow colour, which also smells of that substance.

CALANDRA. A bird which seems to belong to the lark family, though it differs from that vocal class of birds in several particulars. The bill is of a yellowish brown colour, and dusky along the top of the upper mandible; and the eyes are of a dark colour. From the superior part of the bill, through the eye, runs a black dusky line, above and beneath which there are interstices of a whitish colour. On the sides of the head below the eyes there are also broken blackish lines; and at the beginning of the breast it has a remarkable black collar. The throat and fore part of the neck are whitish, mixed with light brown; the top of the head, the upper side of the neck, the back, wings, and tail, are of a reddish brown, the middle part of the fea-

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thers being black. The breast, below the collar, is of a light brown, spotted with a darker shade of the same colour; the belly, thighs, and covert-feathers under the tail, are white; the legs, toes, and claws, are of a flesh-colour; the hinder claws are pretty strong, as in larks; and the insides of the wings, as well as the under-side of the tail, incline to ash-colour. This bird is said to be a native of Carolina.

CALANDRE. A name given by French naturalists to a species of insect of the *scharabæus* class, extremely destructive in granaries. The female lays a considerable number of eggs; and the increase of these creatures would be very great, had not Nature ordained that, while they are in the egg, and even in the worm-state, they should be liable to the depredations of mites, which destroy far the greatest number of them before they arrive at maturity.

CALANGAY. A name given by the natives of the Philippine Islands to a species of beautiful white parrot, adorned with a crest of the same colour. It is about the size of a pigeon; is easily tamed and taught to speak; and is sometimes called the *catatua* and *abacay*.

CALAO. An oriental bird described by Sonnerat, apparently of the toucan kind, and about the size of an European crow. The bill is extremely long, bent into an arch representing a scythe, denuded at it's edges both above and below, and terminating in a sharp point: it is furrowed across, both above and below, for upwards of two-thirds of it's length; the convexity of these furrows is brown, and their interstices are yellow. The rest of the bill is smooth, and of a brown colour; and at it's base rises an excrescence, of the same substance with the bill itself, which extends about one half of it's length. The eyes are surrounded with a brown membrane, entirely naked; but on the eyelids grows a circle of rough short hair, like the human beard. The irides are whitish; the head, neck, back, and wings, of the male, are black, with a greenish cast, changing, according as it is viewed, to blue. The top of the breast is of a bright reddish brown colour; the belly, legs, and vent, are of a deep reddish brown; the tail consists of ten feathers, of a reddish yellow, upwards of two-thirds of their length terminating in a black band; and the feet, which are of a leaden hue, consist of four claws each.

CALARMARY, or SLEEVE-FISH. This creature somewhat resembles the cuttle-fish; but it has an oblong gristly body, covered with two skins; in which respect, as well as in having softer flesh, it differs from the cuttle-fish. However, it has ten legs; the four middlemost of which are pyramidal, and have rough bony tubercles on their insides; on each side of these there is another leg, very long and thick at the extremity, covered with a kind of testudinous tubercles, which the two following pair have through their whole length, on their insides. On the belly there are two receptacles, full of a very black fluid, which might answer the ordinary purposes of ink.

CALENDULA. A species of the *motacilla*, in the order of *passeres*; a bird found in Pennsylvania.

CALF. The young of the cow kind; an animal too well known to require a particular description. See Cow.

CALF, SEA. See SEA-CALF.

CALLARIAS. A name given by some naturalists

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ralists to a fish of the truttaceous kind; called by Aldrovandus, tinca marina; and by Rondoletius and Gesner, phycis. It usually grows to the length of a foot; is of a flattish shape, and covered with small scales of a greyish colour, but purplish on the head; and the tail is roundish, but not forked. The flesh is well tasted, and salubrious. This fish is common in the Mediterranean Sea; and is exposed to sale at Rome, Venice, and other places on the coasts of that sea.

CALLICHTHIS. The name of a broad and flat sea-fish exposed to sale in the markets at Rome, under the title of the campugna; and commonly called the stromateus.

In the Linnæan system, it is a species of the *stomus*.

CALLICHTHUS. A small fish caught in the Adriatic, by some naturalists called the anthias; and it is supposed that there are no voracious fishes near the place where it is found. It is also called *facer piscis*, and is extremely beautiful.

CALLIDRYS. A name given by Bellonius, and some other authors, to an aquatic bird known in England by the appellation of the red-shank.

CALLYDRYS, NIGRA. A bird described by Bellonius, supposed to be the same as the above; and called the knot in England.

CALLIONYMUS. A name applied by Ap- pian, and some other authors, to the fish more usu- ally called the *uranoscopus*, or star-gazer.

In the Linnæan system, it is a genus of the or- der of jugular fishes, comprehending three species.

CALLITRICHUS, or CALLITRIX. A species of monkey, with a black flattish face, white hairs on the sides, and black ears. The upper parts of the body are covered with soft hair of a yellowish green colour, whence it has received the name of the green monkey; and the lower parts are covered with hair of a silvery colour. This animal is about the size of a small cat.

CALLORYNCHUS. A fish entirely desti- tute of scales, but furnished with gristly fins. It is of a silver colour on the back, and of a shining gold one on the sides. The lower lip is long and broad; and, when the mouth is shut, it covers the upper. The teeth are only smooth tubercles placed in each jaw; and the nostrils are placed on the lower part of the head, each having only a single aperture. The eyes are situated near the sides of the head, and are covered with a single coat; the irides are of a silver colour; and the eyelids are oval. The belly is large and flat; and the vent is situated between the belly fins, nearer the tail than the head. There are seven fins, two dorsal, two pectoral, and two ventral; the tail constituting the seventh. The length of this fish, from the tip of the snout to the extremity of the tail, is upwards of nine inches.

CAMEL. This forms a distinct genus of ani- mals in the Linnæan system of zoology; the great characteristics of which are, that they want horns, which all the other genera of pecora have; that they have six cutting teeth in each of their lower jaws, and none in their upper; and that their upper lips are divided like those of hares; and their hoofs are small, and undeciduous.

There are several species of Camels: one of which is the dromedary; the only sensible difference be- tween which and the Camel is, that this animal has two bunches on it's back, whereas the dromedary has but one; the latter also is neither so large nor so strong as the former. The two races, however,

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generate with each other; and the mixed breed formed between them is considered as the best, the most patient, and the most indefatigable, of all the several kinds.

The dromedary, indeed, is by far the most nu- merous of the two varieties: the Camel is very scarce, except in Turkey, and the countries of the Levant; while the dromedary is disseminated all over the deserts of Arabia, the southern parts of Africa, Persia, Tartary, and the East Indies. Thus the one inhabits an immense tract of country; the other, in comparison, is confined to a province: the one is a native of the sultry regions of the torrid zone; the other delights in a warm, though not a burning climate. But neither of them can either subsist or propagate in the variable climates of the north; and they seem only to delight in those coun- tries where no other animals are qualified to su- percede their utility.

The Camel is the most temperate of all creatures, being capable of continuing it's march for several days without tasting water. In those extensive de- serts where the earth is every where dry and sandy, where there are neither birds nor beasts, in- sects nor vegetables, and where nothing is to be seen but hills of sand; the Camel travels, posting for- ward without requiring either drink or pasture; and often endures a total want of sustenance for six or seven days successively. It's feet, which are well adapted for travelling on sands, are utterly unfit for moist or marshy places: and accordingly the inhabi- tants of those sultry regions where it is bred find a valuable slave in this animal, where no other could subsist; and, by it's assistance, cross those deserts with security, which would be impassable by any other known method.

An animal thus formed for a sandy and desert region cannot be propagated in one of a different nature. Many efforts have been made to generate Camels in Spain and America, but they have not multiplied in either of these countries: they are, indeed, sometimes introduced into them, and found prolific; but the care of keeping them is so great, and the accidents to which they are exposed from the variableness of the climate so numerous, that they never repay their necessary trouble and expence: in a few years, they are observed to degenerate; their strength and patience forsake them; and, in- stead of constituting the riches, they become the burden of their owners.

The case, however, is very different in Arabia, and those other countries where the Camel is employ- ed for the most beneficial purposes. It is there re- garded in a sacred light, and as an animal without whose help the natives could neither subsist, traffic, nor travel: it's milk constitutes a part of their nou- rishment; they feed on it's flesh; they cloath them- selves with it's hair; and, in case of invasion, it serves to accelerate their flight, being some- times known to travel upwards of a hundred miles in a single day. By means of the Camel, an Arabian finds safety in his inhospitable deserts; and all the armies on earth might be lost in pursuit of a flying squadron of this country, mounted on Ca- mels, and taking refuge in solitudes where nothing interposes to impede their flight, or to force them to face their invaders. Thus, where nature pre- sents only objects of danger and sterility, the Arabian finds protection, food, and liberty: in the midst of his solitudes, he lives independent and tranquil; and, instead of considering the wastes spread around him as a restraint on his happiness, he

He is taught by experience to regard them as the munitions of freedom.

The Camel (being a very docile animal) is easily instructed in the methods of taking up and supporting its burden. Its legs are bent under its belly a few days after it is produced; and in this manner it is loaded and taught to rise, the burden being every day increased by insensible degrees, till the animal is capable of supporting a weight adequate to its strength. The same care is taken to render it patient of hunger and thirst: while other animals receive their food at stated times, the Camel is restrained for several days together; and these intervals of famine are increased in proportion as the creature seems capable of supporting them. By this mode of education, it lives five or six days without food or water: and indeed its stomach is admirably fitted by nature for long abstinence; for, besides the four stomachs which all animals chewing the cud possess, the Camel has a fifth, which serves as a reservoir to contain a greater quantity of water than the animal has immediate occasion for, where it remains without either being corrupted or adulterated by the other aliments. When the Camel finds itself pressed with thirst, it here finds an easy resource for quenching it; and throws up a quantity of this water, by a simple contraction of the muscles, into the other stomachs, which serves to macerate its dry food. In this manner, as it drinks but seldom, it takes in a large quantity at a time; and travellers, when parched with thirst, have often dispatched this useful animal for the sake of the fluid it was expected to contain.

In Turkey, Persia, Arabia, Barbary, and Egypt, the whole commerce of the natives is carried on by means of Camels; and no carriage is more speedy, nor can any be less expensive. Merchants and travellers unite themselves into a body, furnished with Camels, to secure themselves from the insults of those robbers who infest the countries through which they are to pass. This assemblage is called a caravan, in which the number of itinerants sometimes amounts to upwards of ten thousand, and that of Camels to a still greater number. Each of these animals is loaded according to its strength; and so sensible is the Camel of its own ability, that, if overburdened, it remains on its belly, and refuses to rise till its load is apportioned to its powers. In general, a large Camel is capable of carrying a thousand weight, and sometimes twelve hundred; while the dromedary is sufficiently loaded with six or seven. During these trading journeys they travel but slowly; and their stages, which are generally regulated, amount to about thirty or thirty-five miles a day. Each evening, when they arrive at the place of their destination, which is usually some spot of verdure where water and shrubs abound, the Camels are permitted to feed at large; and on such occasions they eat as much in one hour as is fully sufficient to support them the succeeding twenty-four. They prefer the coarsest weeds to the softest pastures; the thistle, the nettle, the casia, and other prickly vegetables, are their favourite food: but, as all natural supplies of provisions are accidental during these expeditions, their drivers take care to supply them with a kind of paste composition, which serves as a permanent nourishment. As these animals are accustomed to the same tracts, they are said to know their way with precision, and to pursue their journey when their guides are utterly astray; and when they come within a few miles of their usual baiting-place, they sagacious-

ciously scent it, increase their speed, and often trot with additional vivacity to the end of their stage.

Buffon seems to consider the Camel as the most domesticated of all animals, and to have most marks of the tyranny of man imprinted on its form. He is of opinion that this creature is not now to be found in a state of nature; and that the hump on its back, the callosities on its breast and legs, and even the great reservoir for water, are all marks of long servitude and domestic constraint. These deformities he supposes to be perpetuated by generation; and that what at first was the effect of accident, by degrees became natural. However this may be, it is certain that the hump on the back of the Camel grows large in proportion as it is well fed; and that, if anatomized, it will be found composed of a substance not dissimilar to the udder of a cow.

Nine out of ten male Camels are usually castrated; and though this operation may somewhat enfeeble them, it adds to their patience and docility. The female receives the male in a recumbent posture; she goes with young about a year; and, like all other large animals, produces but one at a time. The milk of the Camel is both abundant and nutritive; and, mixed with water, makes a principal part of the beverage of the Arabians. These animals begin to engender when about the age of three years, and commonly live to forty or fifty. The genital parts of the male resemble those of the bull, but are placed pointing backwards; so that its urine seems to be ejected in the same manner as that of the female: and this, as well as the dung, and indeed almost every part of this animal, is converted to some beneficial purpose. Of the urine, sal ammoniac is made; and of the dung, litter for horses, and fire for culinary uses. Thus this animal alone seems to comprize within itself a variety of qualities, any one of which serves to render other quadrupeds absolutely necessary for the welfare of man. Like the elephant, it is tractable and tame; like the horse, it gives its rider security; carries greater burdens than the ox or the mule; and furnishes milk in as great abundance as the cow. The flesh of the young ones is supposed to be as delicate as veal; the hair is more beautiful, as well as more in request, than wool; and even its very excrements are applied to useful purposes.

The Camel has a small head, short ears, and a long neck, slender and bending. Its height to the top of the hump is about six feet six inches; the colour of the hair on the protuberances is dusky, and that on the other parts is a reddish ash. It has a long tail, small hoofs, and flat feet divided above, but not quite through. On the legs it has six callosities; one on each knee, another on the inside of each fore-leg on the uppermost joint, one on the inside of the hind-leg at the bottom of the thigh, and another on the lower part of the breast.

There are several varieties of Camels: the largest and strongest is called the Turkman; the Arabian is hardy; and what is called the dromedary, mahary, and raguahl, is very swift. The common sort travel about thirty miles a day. Those which have smaller humps, a more delicate shape, and are of an inferior size, are used solely for the purpose of riding, and never carry burdens; some of which, as has been previously observed, are capable of travelling an hundred miles a day. The Camels of Africa are well adapted to that parched and unpropitious climate by the extreme hardiness

of their nature; and are capable of performing journeys from Numidia to Ethiopia, over burning deserts, where no other animals could long exist.

CAMEL, ARABIAN. The hair of this species is curled, and longer than that on other animals of this kind, except on the bunch; and the hair on the back is different from that on the other parts, being grey and coarse, and greatly resembling that on a horse's tail.

CAMEL, BACTRIAN. This animal has two bunches on it's back; but, in all other respects, it resembles the former varieties, and is equally adapted either for riding or carrying loads.

The two-bunched Camel is still found wild in the deserts of the temperate parts of Asia; particularly in those between China and India; and these are more large and generous than the domesticated race.

The Bactrian Camel, as it is called, is very common in Asia, and is much used among the Tartars and Mongols as a beast of burden.

CAMEL, CHINESE. This variety is remarkable for it's fleetness, and is therefore called by the expressive name of Fong Kyo Fo, or Camels with feet of the wind. It has two bunches, covered with long hair; the neck is short and thick; and the hair is thick, and as long as that of goats, being sometimes of a brownish yellow colour, and at others reddish, with an admixture of black.

This species of Camel being an exotic, is very rare in Arabia; and is accordingly in the possession only of men of opulence.

CAMEL, LLAMA. This animal, which may be considered as the Camel of the new world, is considerably smaller than that of the old. It stands high on it's legs, has a very long bending neck, a small head, fine black eyes; and, like the Camel, is mild, gentle, patient, and tractable. It's height is about four feet; and it's length, from the neck to the tail, is about six. Some of them are white, and others black; but they are in general brown.

According to the editor of Byron's Voyage, the shape of the Llama exactly resembles that of a Camel, except that it wants the bunch on it's back. It is the most useful animal of Peru and Chili, and was the only beast of burden known to the Indians previous to the arrival of the Spaniards. Before the introduction of mules, they were used by the Indians in plowing their lands; and at present they are employed in carrying burdens not exceeding an hundred weight. They move with a gravity not badly expressive of the disposition of their Spanish masters; and, like them, cannot be prevailed on to alter their pace. They lie down in order to be loaded; and, when weary, no blows can provoke them to proceed. Feuillée says, they are so capricious, that if their drivers strike them, they immediately squat down, and nothing but caresses can induce them to rise. Between the breast and the belly of this animal there is a kind of bunch, from which a kind of matter frequently oozes.

This animal is more temperate than even the Camel of the old world; and, of all other creatures, seems to have the least occasion for water, nature having supplied it with such large quantities of saliva, that it spits on every occasion; and this saliva seems to be the only offensive weapon with which this harmless creature is furnished, and by which it can express it's resentment. When offended, it falls on it's belly, and pours out against it's adversary a quantity of this fluid, which, if it comes in contact

with the skin, immediately occasions an irritation, and a reddish spot.

The flesh of the Llama Camel is proper for food, being esteemed equal to mutton; but it's wool has a strong, disagreeable scent. It is extremely sure-footed; and is therefore peculiarly serviceable in transporting the Peruvian ores over the most rugged hills and narrowest paths of the Andes.

These animals inhabit that vast chain of mountains which extend to the Straits of Magellan; but, except where those hills approach the sea, they are never found on the coast. In a wild state, they assemble in great numbers in the highest and steepest parts of the hills; and, while feeding, one of them stands as sentinel on the pinnacle of some rock; but, on the approach of any person, the animal neighs, and the herd takes the alarm, and runs off with incredible speed. No dogs are fleet enough to overtake them; and they can only be destroyed by means of fire-arms.

As every domestic animal has had it's origin in a wild state, it is extremely probable that the Llama, and another American animal called the guanaco, are the same. The Llama is described as the largest of the two animals the Peruvians have; for, except that, they know no other than the congenious pacos. Two animals similar to those are found wild: the larger, or guanaco, may be supposed to be a savage Llama; and the lesser, or vicunna, to be the pacos in a state of nature; the brief descriptions procured of each leaving little room to doubt that the difference of colour and hair arises only from culture.

CAMEL, PACOS. This animal is covered with long and very fine wool of a dull purple colour, and has a white belly; but, in a domestic state, the colour varies. It's shape somewhat resembles that of the llama, but it is considerably less. It is of the same nature with that animal, and inhabits the same places; but is more capable of supporting the rigours of frost and snow. These creatures herd together in vast numbers; they are very timid, and excessively swift; and sometimes the guanacos associate with them.

The Indians take the Pacos in a very singular manner. They tie cords, having bits of wool or cloth hanging to them, about three or four feet from the ground, across the narrow passes of the mountains, and then drive the animals towards them, which are so terrified by the flutter of the rags, that they dare not attempt to pass, but, huddling together, give the hunters an opportunity of killing with their slings as many of them as they please.

The Pacos yields bezoar stones; and Waser informs us, that he has taken thirteen out of the stomach of a single animal; that they were ragged and multiform, some round, some oval, and others long; and that their colour was at first green, but afterwards changed to cinereous.

CAMELEON. A little animal of the lizard species, having a short round incurvated tail, and two or three toes joined together; which has long amused the ignorant, and furnished matter of speculation to the philosopher.

This little animal, like the crocodile, proceeds from an egg; and also nearly resembles that formidable creature in it's form, but essentially differs from it in it's magnitude and appetites. It is seldom above eleven inches in length; and generally sits on the branches of trees, being afraid of serpents, from which it is unable to escape when on the ground. The head of a large Cameleon is almost

most two inches long, and from thence to the beginning of the tail four and a half; the tail is five inches long; and the feet two and a half. The thickness of the body is various at different times; for sometimes, from the back to the belly, it is two inches, and sometimes but one, it being possessed of a power of inflating and contracting itself at pleasure; and this inflation and contraction not only extends to the back and belly, but also to the legs and tail. These tumefactions, however, do not proceed from a dilatation of the breast in breathing, which rises and falls by turns, but are very irregular, and seem merely adopted from caprice. The Cameleon often appears blown up, as it were, for two hours together; after which it insensibly grows less and less, the expansion being always quicker and more perceptible than the contraction. In the contracted state, the animal appears extremely lean; the spine of the back seems sharp; all the ribs may be numbered; and the tendons of the arms and legs may be seen very distinctly. This method of inflating itself is similar to that in pigeons, whose crops are sometimes greatly distended with air. The Cameleon possesses the faculty of driving the air it breathes over every part of its body; but it only gets between the skin and the muscles, for the latter are never swollen. The skin is very cold to the touch; and though the animal appears to be very lean, it is impossible to feel the pulsations of the heart. The surface of the skin is unequal, and has a grain not unlike shagreen, but very soft, each eminence being as smooth as if polished. Some of these protuberances on the arms, legs, belly, and tail, are as large as the head of a pin: but, on the shoulders and head, they are of an oval figure, and somewhat larger; and those under the throat are ranged, in the form of a chaplet, from the lower lip to the breast. When the Cameleon is at rest in a shady place, the colour of all these eminences is a blueish grey, and the spaces between them are of a pale red and yellow.

But the most astonishing circumstance relative to the history of this animal takes place when it is exposed to the beams of the sun. At first, it appears to suffer no change of colour, its greyish spots still continuing the same; but the whole surface soon appears to imbibe the rays of light; and the simple colouring of the body changes into a variety of beautiful hues. Wherever the light falls on the body, it is of a tawny brown; but that part of the skin on which the sun does not shine changes into several brighter colours, such as pale yellow, or vivid crimson, which form spots of half the size of a finger, some of them descending from the spine half way down the back, and others appearing on the sides, arms, and tail. When the sun ceases to shine, the original grey colour returns by degrees, and covers all the body. Sometimes the animal becomes all over spotted with brown of a greenish cast; and, when wrapped up in a white linen cloth for two or three minutes, the natural colour becomes much lighter, but not entirely white, as has been pretended by some naturalists: however, from hence we must not conclude that the Cameleon assumes the colours of the objects it approaches; this being an error which probably originated from the continual changes it appears to undergo.

An ample description of the Cameleon is given by Le Bruyn in his *Voyage to the Levant*. During his abode at Smyrna, he bought several of them, and, in order to try how long they would

live, kept four of them in a cage, permitting them at times to range the house. The fresh sea-breeze seemed to give them great spirit and vivacity, and they opened their mouths to admit it; but he never saw any of them eat, except now and then a fly, in swallowing of which the creature employed not less than half an hour. He observed that their colour changed three or four times successively, but without being able to assign any cause for such alteration: their common hue he found to be grey, or rather a pale mouse; but its most frequent change was into a beautiful green spotted with yellow. Sometimes also the animals were marked all over with dark brown; and this often changed into a lighter hue: some colours, however, they never assumed, and that of red he found to be among the number. Notwithstanding his utmost care, our traveller was unable to preserve any one of these animals alive above five months, and some of them died in four.

When the Cameleon changes its place, and attempts to descend from an eminence, it moves with the utmost precaution, advancing one leg very deliberately before the other, but still securing itself by holding whatever it can grasp by means of its tail. It seldom opens its mouth, except for fresh air; and, when that is supplied, it discovers great satisfaction by its motions, and the frequent changes of its colour. The tongue, which is as long as the whole body, is sometimes darted out after flies, the creature's usual food. The eyes, though they project from the head, are remarkably small; and they have a single eye-lid, like a cap, with a hole in the middle, through which the sight appears, of a shining brown colour, and round it there is a little circle of a golden hue. But the most extraordinary circumstance in the conformation of the eyes is, that the animal often moves the one, while the other is entirely at rest; nay, sometimes one eye will seem to look directly forward while the other looks sideways; and one will look upwards while the other regards the earth.

Naturalists are not agreed either as to the manner or reason of the Cameleon's change of colour. Seneca, and some others, assert, that it is effected by suffusion; Salinus and others, by reflection; and the Cartesians, by the different disposition of the parts composing the skin, which give a different modification to the rays of light. Kircher ascribes the change of colour in the Cameleon to the power of imagination in the animal, because it loses it when dead. Others, and particularly Dr. Goddard, ascribe the change to the grains of the skin; which, in their various postures, he thinks may exhibit several colours; and, when the creature is in full vigour, may have, as he terms it, *rationem speculi*; that is, the effect of mirrors; and reflect the colours of adjacent bodies.

As the Cameleon possesses the faculty of filling its skin more or less, it is not only capable of altering the tone and texture of the fibres, on which the reflective quality in a great measure depends, but also of bringing parts into view which before lay concealed, or of concealing such as before lay open: and it is highly probable that the parts which are in general covered, are of a somewhat different colour from those constantly exposed to the action of the air.

On the above principles, perhaps, all the phenomena in the Cameleon's colour may be solved. The animal, it is evident, possesses the power of reflecting different coloured rays from the same parts,

parts; and also of making certain parts reflect, and of preventing others from reflecting; and hence that variation, that medley of colours.

The Cameleon, however, is not the only animal possessed of the property of changing its colour. Grew mentions a sort of lizard, which, when swelled with rage, changes its colour from green to a kind of russet; and a similar account is given of the *naque mousche*, an insect peculiar to the island of Nevis, in the West Indies; several varieties of which curious animal are described by naturalists.

CAMELEON, MEXICAN. This animal is of a very singular shape, the back being crooked, and the body thick. The head is adorned with a crest, or triangular bony crown, bordered with small tubercles like so many pearls, some of which also appear on the nose and forehead. The breast, as well as all the under parts of the body, seem to be beset with a kind of serrated teeth, reaching as far as the tail, which is curled at the extremity. The back and belly are of a dark ash-colour; but the sides are of a pale yellow ash, and covered with small round reddish scales. The female generally carries her tail turned upwards like a pug-dog; but that of the male is less curled.

CAMELEON, AMBOYNA. The tail of this species is turned upwards. It has a sort of crown on its head quite different from that of the former, resembling a kind of capuchin: this crown is pretty flat, and covered with scales which have the appearance of pearls, as well as the throat and the rest of the body; but in these parts they are much smaller. The eyes are pretty large, and surrounded with a ring; the spine of the back and the tail are arched and round; and the vertebræ may easily be perceived. The body is covered with small scales of a brownish ash-colour; but those on the head, legs, and tail, are somewhat lighter.

CAMELEON, CEYLONESE. This species is of a saffron-colour; and all the scales rise like pearls, which, on the upper part, are pretty resplendent. The crest or crown is covered with large convex scales, very curiously bordered with round buttons; the snout is very large and blunt; the throat is also large; and the tongue, which is long, is thrust out a great way. The under part of the body, from the lower jaw to the vent, is full of small teeth or prickles, formed like a saw. Like the ant-eater, it subsists on ants, which affix themselves to its tongue when thrust out.

CAMELEON, AFRICAN. This animal is blackish, but the teeth or prickles on the back are whitish. It is the largest of the kind. Its tongue, when protruded, resembles that of a neat turned upside down, being flat and rough beneath. The prickles are extremely white, and surrounded with a blackish streak. The upper part of the body, the head, and the tail, are painted with a bright ash-colour of a flamiform appearance; the legs are long and slender; and the feet, which are thick, consist of five toes, at the ends of which are small sharp crooked claws.

CAMELEON OF THE CAPE OF GOOD HOPE. This creature is mottled with white and blue, and the greatest part of the tail is of a bright ash-colour. The crest is flat, oblong, and dentated at the edges, extending from the point of the snout to the neck, where it is folded like the collar of a coat. It is said to assume the colours which are nearest it; appearing blue, yellow, and green, alternately.

CAMELITA. Another appellation for the bison.

CAMELOPARD. A singular kind of animal, which seems properly to belong to no known class of quadrupeds, but to be perfectly sui generis. It is called *camelopardalis* by Latinists, and *giraffa* and *zurnapa* by oriental nations. Linnaeus makes it a species of the *cervus*, or stag kind, with simple horns and very long fore legs; and Pennant makes it a species of goat.

It is not easy to form an adequate idea of the size of this creature, and the oddity of its figure. It somewhat exhibits the slender shape of the deer, or the camel; but is destitute both of their symmetry and easy power of motion. The head bears some resemblance to that of the deer, having two round horns about six inches long, and which it probably sheds every year. Its neck resembles that of a horse; and its legs and feet those of a deer, but with this extraordinary difference, that the fore parts are near twice as long as the hinder. As this creature has sometimes been found eighteen feet in height, and ten from the ground to the top of the shoulders; so, allowing three feet for the depth of the body, seven feet remain, which is a height sufficient to admit a man mounted on a middle-sized horse. The hinder part, however, is much lower; so that when the animal is in a standing posture, it has somewhat the appearance of a dog sitting; and this peculiar formation of its legs gives it an awkward and laborious motion, which, though swift, must nevertheless be tiresome. For this reason, the Camelopard is very rarely found, and only finds refuge in the most internal deserts of Africa. The dimensions of a young one, as they were accurately taken by a person who examined its skin, which was brought from the Cape of Good Hope, were found to be as follow: the length of the head was one foot eight inches; the height of the fore-leg, from the ground to the top of the shoulder, was ten feet; from the shoulder to the top of the head, seven; that of the hind-leg was eight feet five inches; and, from the top of the shoulder to the insertion of the tail, it was exactly seven feet long.

No animal, either from its disposition or formation, seems less fitted for a state of natural hostility than the Camelopard. Its horns are blunt, and even knobbed at the ends; its teeth are entirely formed for vegetable pasture; its skin is beautifully speckled with white spots on a brownish ground; it is timid and harmless; and, notwithstanding its vast size, rather flies from than resists the most insignificant enemy. It greatly partakes of the nature of the camel, which it likewise nearly resembles. It lives entirely on vegetables; and, when grazing, is obliged to spread its fore-legs very wide, in order to reach its pasture. Its motion is a kind of gallop, two legs on each side moving at the same time; whereas, in other animals, they move transversely. It often lies down on its belly; and, like the camel, has a callous substance on its breast, which, when reposing, defends it from injury.

This animal was known to the ancients, but has very rarely been seen in Europe. When ancient Rome was in its splendour, Pompey exhibited no less than ten of them at once on the theatre. It was a barbarous pleasure peculiar to the people of those times to see the most ferocious, as well as most extraordinary animals, produced in combat against each other: the lion, the lynx, the tiger, the

the elephant, and the hippopotamos, were all let loose promiscuously, and inflicted indiscriminate destruction.

The last Camelopard recorded to have been seen in Europe, was sent from the East to the Emperor of Germany, in 1559: however, these animals have often been seen tame at Grand Cairo in Egypt, though the race is far from being numerous.

The Greeks called this animal Camelopardalis; because, as they supposed, it was generated between a camel and a leopard.

CAMURI. A sea-fish of the lupus or baffe kind, common in the seas and larger rivers of America. It grows to about two feet in length, and one foot in thickness. The head is monstrously large, and the mouth extremely wide. It has a large strong fin on it's back, armed with sharp prickles; and a furrow in the back behind it, into which the fish can occasionally lay it down. It's sides are yellowish; it's belly is white; it's fins are of a brownish yellow-colour; and it's side-lines, which run from the gills to the tail, are broad, and of a fine black.

CANALIS. See **TUBULUS MARINUS.**

CANARY BIRD. This bird, which is of the size of a titmouse, has a short bill, thick at the base, and of a whitish colour. It has now become so common, and continued so long in a domestic state, that it's native habits, as well as it's native country, seem almost forgotten. Though, from the name, it appears that these birds came originally from the Canary Islands, we now have them from Germany only, where they are bred in great abundance, and exported to different parts of Europe. At what period they were introduced into this quarter of the world, is not well ascertained; but it is certain that, about a century ago, they were sold at very high prices, and kept only for the amusement of the great: they have, however, since multiplied in great abundance; and their prices have diminished in proportion to their numbers. In their native islands, a region equally celebrated for the beauty of it's landscapes and the harmony of it's groves, the Canary Birds are of a dusky grey-colour, and so very different from those usually seen in Europe, that some naturalists have even doubted whether they are of the same species. With us, they have that variety of colouring common to all domestic fowls; some being white, others mottled, and some beautifully shaded with green: but they are more esteemed for their notes than their beauty, having high, piercing pipes, as indeed all those of the finch tribe have, continuing for some time in one breath without intermission, then raising it higher and higher by degrees, with great variety of execution. This quality has rendered the Canary Bird, next to the nightingale, the most celebrated songster; and as it is more easily reared than any of the soft-billed birds, and continues it's song throughout the year, it is the most common tenant of our rooms. Rules have been laid down, and copious instructions given, for breeding these birds in a domestic state; which, as they partly elucidate their natural history, are here subjoined.

In chusing Canary Birds, those are preferable which appear with life and boldness, standing upright on their perches, like sparrow-hawks, and not apt to be frightened at every noise. If their eyes look cheerful and bright, it is a sign of health; but, on the contrary, if they hide their heads under

their wings, and gather up their bodies, these are symptoms of their being disordered. The melody of the song should also be regarded in making a selection; for some will open with the notes of the nightingale, and, after running through a variety of modulations, end like the tit-lark; others, again, will begin like the sky-lark, and, by soft melodious turns, fall into the notes of the nightingale. There are lessons taught this bird in it's domestic state, and generally borrowed from others; but it's native note is loud, shrill, and extremely piercing.

Canary Birds sometimes breed all the year round; but they most usually begin to pair in April, and to breed in June and August; and those are said to be the best breeders which are produced between the English and the French.

Towards the end of March, a cock and a hen should be put together in a small cage, where they will betray signs of animosity at first, but will soon become perfectly reconciled. The room where they are kept to breed should be so situated as to let the birds enjoy the morning sun; and the windows should be constructed of wire rather than glass, that the air may have free access. The floor of the room should be kept clean; and sometimes dry gravel, or sifted sand, should be sprinkled over it. In the cage likewise should be two windows, one at each end; and several perches, at proper distances, for the birds to settle on, as they fly backwards and forwards. A tree in the middle of the room would be most convenient to divert the birds, and would sometimes serve for the purpose of building their nests.

In Germany, where the breeding of these songsters forms the occupation of numbers, they build a large room in the manner of a barn, with a square place at each end, and several apertures to these apartments. In these they plant several sorts of trees, in which the birds take great delight to sing and breed. The bottom of the place they strew with sand; and on it strew rape-seed, chickweed, and groundsel, on which the old birds feed while breeding. In the body of the house they place all sorts of stuff fit for building the nests; and brooms, one under the other, in all the corners, for the birds to build in. These they separate by partitions from each other, to prevent those above flying down on, or otherwise incommoding, those which breed below. The light is also excluded, no bird being fond of it too full on it's nest.

With us, however, the apparatus is much less expensive; a breeding-cage often suffices; and, at most, a small room without any particular preparation. While the birds are pairing, it is usual to feed them with soft meat; that is, bread, mawseed, a little scalded rape-seed, and about the third part of an egg. The apartment should be furnished with stuff proper for constructing the nests, such as fine hay, wool, cotton, and hair. These materials should be perfectly dry, and then mixed and tied together in such a manner that the birds may easily pull out what they want. This should be hung in a proper part of the room; and the male will be found to take his turn in building the nest, sitting on the eggs, and feeding the young. They are generally two or three days in completing their nests; the hen commonly lays five eggs, and in the space of fourteen days the young are excluded. So prolific are these birds, that the female will sometimes be ready to hatch a second brood before the first are able to quit the nest. On such occasions, she leaves the nest and the young, in order to provide

vide another habitation for her new brood. In the mean time, the male, more faithful to the duties of his trust, breeds up the offspring left behind, and fits them for a state of independence.

When the young are excluded, the old ones should be supplied with a sufficiency of soft food every day; and likewise with fresh greens, such as cabbage, lettuce, and chickweed; in June with shepherd's purse, and in July and August with plantain. They ought never to have groundsel after the young are removed. With such delicacies the old ones will be sedulous in feeding their young brood; who, when arrived at a sufficient age, feed themselves, and are put into cages. Their meat then is the yolk of an egg boiled hard, with an equal quantity of fine bread, and a little scalded rape-feed, which must be bruised all together till they become fine, and then mixed with a little maw-feed; after which, all may be blended in a mass, and the birds supplied with a fresh quantity daily.

Canary Birds are apt to be disordered either through colds, or by feeding too much on vegetables unmixed with seed. This may be discovered by blowing up their belly-feathers; for if their bellies be swelled, transparent, and full of red veins, with the bowels sunk down to the extreme parts of their bodies, they are certain signs of indisposition. When these parts appear black, their complaints frequently prove mortal: in such cases, however, the birds must be kept warm; and oatmeal should be mixed among their seed for three or four days, with liquorice in their water; but if the habit of the birds be too lax, maw and bruised hempseed should be given them, with saffron in their water; or milk and bread, with a little maw-feed intermixed.

Another distemper which frequently affects Canary Birds, is a little pimple in the rump called the pip: this will generally vanish of itself; but when it does not, it should be pricked when ripe, for the purpose of discharging the matter lodged in it; after which, a bit of loaf-sugar, moistened in the mouth, should be applied to the sore.

A third disease incident to Canary Birds consists of a sort of yellow scab about the head and eyes, which sometimes swells, and is filled with matter. In such distemper, the part affected should be anointed with fresh butter, lard, or oil of sweet almonds; either of which will effect a cure.

The moulting-time may be known by the birds appearing rough, melancholy and sleepy, and often putting their heads under their wings; besides which symptoms, the bottoms of their cages will be covered with down, or small feathers. At this time they should be kept warm, and placed in the sun, in fine bright weather. Their food should consist of Naples biscuit, bread, and egg, mixed together, with saffron in their water; and also bruised hempseed mixed with lettuce and maw-feed. If the season be very hot, the birds should have liquorice instead of saffron; and their food should be plantain and lettuce-feed.

The Canary Bird, when kept in company with the linnet or goldfinch, pairs, and produces a mixed breed, but more like the Canary Bird, and resembling it principally in its song. Indeed, all this tribe, with strong bills and piercing notes, and feeding on grain, have the strongest similitude to each other; and may justly be supposed, as Buffon imagines, to come from the same original. They all breed about the same time; they frequent the

same vegetables; they build in the same hedges and trees; and are brought up for the cage with the same food and precautions. The linnet, the bullfinch, and the goldfinch, when once we know the history of the Canary Bird, have few peculiarities which can either attract our curiosity or require our care. The only art necessary to be practised towards all those birds which have no natural fine note, is to breed them up under some more pleasing harmonists. The goldfinch acquires a more melodious note from the nightingale; and the linnet and the bullfinch may be taught to whistle long and regular tunes.

CANAVAY. A Philippine sea-bird, about the size of a pigeon, which lays its eggs on the naked rocks, where it sits and hatches them. Some naturalists have supposed this bird to be no other than the common king's fisher; but this is scarcely probable, as we have no accounts of the beauty of its colours, which being so very remarkable in that class of birds could hardly have escaped observation. It is much more probably some aquatic bird wholly unknown in this part of the world.

CANCELLUS, in English, the **WRONG HEIR**. A very small species of cray-fish, which the French call hermit, or St. Bernard the hermit, because it shuns other fish, and retires into the first shell it can find. Its body is somewhat long, but in general bears a strong resemblance to that of a spider, except that it is a little thicker. It is found in slimy places near rocks, commonly enveloped in a shell as big as a nut, of a conic figure, thick, very hard, rugged, furrowed, and externally grey, but internally white and smooth. This shell is so well adapted to the animal, that it is difficult to force it from its inclosure: some, however, wash, dress, and eat it. It contains abundance of volatile salts, and acts both as an aperient and dissolvent. An oil extracted from it is imported from America, and used in rheumatic cases.

In the American islands there is found a much larger species of Cancellus, being three or four inches long. It is called the soldier, because it possesses, and fortifies itself in, an extraneous shell. As its natural covering leaves its hinder parts naked, it employs itself, as soon as it has acquired sufficient strength, in searching out another proportioned to its size, into which it thrusts its posteriors, and adjusts itself; but, when it grows larger, and finds itself confined, it is obliged from time to time to go in search of other shells. To the curious, it is amusing enough to observe how this animal stops at all the shells it meets with, in order to consider them; and, whenever it finds one fit for its purpose, how it quits its own, and crowds into its new tenement with precipitation, as if ashamed of being naked: and if two of these creatures are stripped at one time, for the purpose of entering the same shell, they fight till the weakest is compelled to submit.

The inhabitants of the American coasts fish for them, string them up by their heads, and expose them to the sun, which melts all except their solid parts. The dissolved substance, or oil, is esteemed excellent in rheumatisms, to which the natives are very subject.

CANCER. The classical name for the crab.

CANCROMA. A genus of birds of the order of grallæ; having gibbous beaks, and their upper mandibles shaped like boats turned upwards. Linnæus reckons two species, the cochlearia, and the

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the *cancerophaga*; the former is found in Guiana, and the latter in the Brazils.

CANDELARIA. A species of insect belonging to the genus of *fulgora*, and the order of *hemiptera* in the Linnæan system.

CANICULA. An appellation used by Pliny and other historians to express the fish called *lamiola* by the Italians. It is the *galeus canis* of authors; and, in Cornwall, is called the tape. Artedi makes it a species of *squallus*, with the nostrils placed near the mouth, and small foramina near the eyes.

The term *Canicula* is also applied by Aristotle, (and, since him, by Rondeletius, Aldrovandus, and others) to signify the catulus.

CANINANA. An American serpent, esteemed one of the most inoffensive kind. It grows to the length of two feet; and is green on the back, and yellow on the belly. It feeds on eggs and small birds. The natives cut off the head and tail, and eat the body as a peculiar delicacy.

CANINUS SERPENS. A name given by some naturalists to the *mauballa* of the Ceylonese, a snake which flies at every object that comes in its way with the fury of an incensed dog.

CANIS. In the Linnæan system of zoology, a distinct and very large genus of animals of the order of *feræ*, and class of *mammalia*, including all the dog kind; which this celebrated naturalist only accounts so many varieties and distinct species.

The characters of this genus are; that the several species have six upper fore-teeth, the lateral ones being longest, and the intermediate ones of a lobated figure; that there are also six fore-teeth in the lower jaw, of which the lateral ones are lobated; that the canine teeth are single and incurvated; and that the grinders are six or seven in number.

The species belonging to this genus are: the common dog; the wolf; the *hyæna*; the fox; the *alopex*; the *lagopus*; the jackall, or *lupus aureus*; the Mexican dog, or American mountain-cat, with the tail bent downwards, and an ash-coloured body variegated with brown and yellow spots; and the rhous.

CANIS CARCHARIAS. A name given by Rondeletius, and other authors, to that species of shark called the *lamia*, or white shark; and, by others, *carcharias lamia*.

CANIS GALEUS. A large fish of the shark kind. It has three rows of very sharp teeth; the eyes are disproportionably small; and the irides are of a fine bright silver-colour, with a cast of blue or green. It is caught on the Cornish coasts; and is so extremely fond of human flesh, that it will even venture to leap on shore, in order to acquire it.

CANIS VOLANS. An animal of the bat or *vespertilio* kind; distinguished by Linnæus under the appellation of *vespertilio cauda nulla*, the bat without a tail.

CANKER-WORM. See *SCHARABÆUS*.

CANNEVAROLA. A name given by Aldrovandus, and some other naturalists, to the lesser reed-sparrow; called by others *sicculula cannabina*; and, by Ray, *passer arundinaceus minor*.

CANOSA. An appellation given by Salvian to the fish called by others *canis galeus* and *mustelus levis*.

CANTHARIS. An insect of the beetle kind, from whence proceed *Cantharides*, well known in medicine by the name of Spanish flies, and for their use in blisters. They have feelers like bris-

CAN

les; their wings have flexible cases; their breasts are pretty plain; and the sides of their bellies are corrugated.

Cantharides differ from each other in their size, shape, and colour: the largest are about an inch long, and as much in circumference; while others are not above three-quarters of an inch. Some are of a pure azure colour, others of a pure gold, and some of a mixture of pure gold and azure: however, they are all very brilliant, and extremely beautiful.

This insect consists of four parts; namely, the head, the neck or breast, the body, and the belly. The head is small in proportion; but the mouth is pretty large; and there are teeth in the jaws, having two sorts of articulated pincers, with which it grasps its food, and conveys it to its mouth. In the forehead there are two eyes of a golden colour, and a little prominent; and under them there are two horns, or feelers, like bristles, pretty long, and moveable by means of twelve equal articulations, the last of which terminates in a point. The top of the head, which rises in a bump, is extremely smooth and polished, and divided into two parts. Instead of a chin, there is a beard; and the breast is formed of a single plate, behind which there are a kind of lungs; and it is connected below to the first pair of feet, which are each composed of three parts nearly of the same length, of which the last has five knotted joints, terminated with two crooked claws. The cases of the wings are membranaceous; connected to the breast; and, as it were, shagreened: they are convex above, and hollow beneath; thin, but strong, and covering the upper-part of the body, to which the two last pair of feet are connected. The belly consists of six large rings, which are smooth, and folded at the sides. The body, properly so called, is composed of eight moveable rings, furrowed from end to end. The animal is seemingly destitute of hair; but, if examined with microscopical minuteness, it will be found somewhat hairy, especially in the under-part.

The *cantharides* are bred from worms shaped almost like real caterpillars. They are chiefly natives of Spain, Italy, and Portugal; but, in the summer season, are also to be met with near Paris on the leaves of the ash, the poplar, and the rose; as well as among wheat, and in the meadows. It is very certain that these insects are so very fond of ash-leaves, that they will sometime strip those trees entirely bare. Some naturalists affirm, that they delight in sweet-scented herbs; and it is evident that they are partial to the honeysuckle, lilac, and wild-cherry shrubs; but they are said to possess a rooted aversion to elder-trees, nut-trees, and wheat.

The country people, it is said, expect the return of these insects every seven years; that at those seasons such numbers of them have been seen flying in the air, that they appeared like swarms of bees; and that their smell was so very offensive, as to be perceptible at a considerable distance, especially about sun-set. This disagreeable scent, however, is a guide to those whose business it is to catch them; and, when caught and dried, they become so light, that fifty of them will hardly weigh one drachm.

Those persons who collect these insects tie them either in a bag, or a piece of linen cloth that has been well worn, and then kill them with the steam of hot vinegar; after which they are dried, and kept in boxes. The flies, thus dried, being chymically analyzed,

analyzed, yield a considerable quantity of volatile caustic salt, mixed with a little oil, phlegm, and earth.

Cantharides are penetrating and corrosive; and, when applied to the skin, raise blisters from which proceed a great deal of serous matter. They are used both internally and externally: however, they ought to be prescribed with caution, as their effects fall very violently on the urinary passages; and, in many cases, have proved mortal, either through the wantonness or injudiciousness of the prescriber.

Though several authors have endeavoured to account for the effects of Cantharides on the human frame, we are still in the dark; for all they have said on the subject amounts to no more than this, that they universally affect the urinary passages, in a manner which may be very scientifically described, but very obscurely comprehended.

Linnaeus takes notice of ten different species of Cantharides; the first of which he calls the female Cantharis without wings, which is usually found on the juniper-tree. He informs us that, though he has never yet seen the male, he does not doubt that there is one, because the female shines in the dark; as he thinks, with an intent to discover herself to the male. This seems to be the same as the glow-worm; and confirms, in some measure, what Dale has advanced concerning it.

CANTHARIS, with a red breast and blackish cases to the wings. This species is very large, being above an inch and a half long, and a quarter of an inch in diameter. It is softer to the touch than most other insects of the beetle kind; and has a flattish head and back, except under the eyes. The mouth is small and forked; and the feelers are very short and small; but there are others half the length of the body, consisting of eleven joints, reddish near the base, and brown in every other part. The breast is depressed behind, and cordiform; but the edges are somewhat prominent; the whole being of a reddish colour, except a black spot on the upper part, close to the head. The cases of the wings are plain, smooth, and oblong, but very soft and flexible, and of a brownish-black colour. The body is brown, except the last joint, which is reddish; a tinge of the same colour runs along the sides, which are compressed; and the joints, which are in a manner folded over each other, are covered with a sort of pimples. This species of Cantharis is common about houses in the country, and under hedges.

CANTHARIS, red-breasted, with red cases to the wings. This species is small. The body is black; and the cases of the wings, as well as the breast, are of a bright elegant red, except that there is a black spot on the latter. The feelers are slender; the cases of the wings are soft, silky, and flexible; and the wings are thin, and of a brown colour. This insect is not very common.

CANTHARIS, with black cases to the wings, marked with two red transverse lines. This insect is not larger than a louse. The legs and feelers are black; the head and breast are of a greenish colour; the cases of the wings are of a deep glossy black, marked with two transverse red streaks, one of which is near the base, and the other near the point or extremity; and the sides of the body are reddish. This species is frequently found in pasture-grounds, and under hedges.

CANTHARIS, with testaceous cases to the wings, and a red breast. This insect, which is very common, resembles the last species in every respect, ex-

cept the colour of the cases of the wings, which are of a pale yellow. The breast is destitute of spots, and the eyes are black.

CANTHARIS, with black cases to the wings, and a red breast marked with a white spot. This species, which is called the tree-beetle by some naturalists, is of a blackish-brown colour; and the cases of the wings are slender.

CANTHARIS, with red cases to the wings, and a red breast marked with a black spot. This creature is found in various places, and sometimes among heaps of iron ore. The body is entirely black; the feelers are very slender; the cases of the wings are of a deep red, or saffron-colour, slightly streaked; but the wings themselves are brown.

CANTHARIS, green copper-coloured, with the cases to the wings externally red. This insect, which is of a middling size, is found on nettles, and some other plants. The head, breast, feelers, rings of the belly, and the lower part of the cases of the wings, as well as their interior edges, are of a greenish copper colour; but the extreme part of the cases of the wings, as well as the sides, are red, and the remainder of a greenish copper colour; but the wings are brown.

CANTHARIS, of a greenish copper colour, with red tips to the cases of the wings. This insect is small. The wings are of a blackish brown; and the feelers are entirely black. The breast, head, and cases of the wings, are of a deep green-colour, inclining to copper, with red or saffron-coloured points. The belly is longer than the cases, and, underneath, of a copper colour; but the wings are internally red. This species, however, varies with respect to the cases of the wings, which are sometimes blue, and at others red.

CANTHARIS, with black cases to the wings, marked with two red streaks. The head and breast of this insect, which is no larger than a louse, are green.

CANTHARIS, with black cases to the wings, yellow points, and a black breast. This species is likewise of the size of a louse; but the head and breast are entirely black. The tips of the cases of the wings are of a yellow sulphur colour; and the sides of the belly are of a bright yellow.

CANTHARIS, brown, with the cases of the wings yellow at the points, and a red breast. This species is very small. The breast is of a rusty red colour, with a black spot; the cases of the wings, which are brown, scarcely reach half way down the belly; the thighs are black; the legs are pale; and the segment on the belly is yellow on the edges.

CANTHARIS, black, with livid cases to the wings. This is the most minute insect of the kind, and is only found on plants.

CANTHARUS. A sea-fish nearly resembling the sparus and sargus in shape, but of a darker colour, and covered with small scales, without the annular black spots which these fishes usually have near their tails. It is common in the Mediterranean seas; and is frequently brought to market at Rome, where it is esteemed a well-tasted fish.

The Cantharus of antiquity is called by Artedi the silver-eyed sparus, with longitudinal and parallel yellow lines on each side. Gaza gives this fish the appellation of *icharabæus*.

CANUTI AVIS. See TRINGA.

CAOUANNE. A species of tortoise which bears a strong resemblance to the *jurucua* of the Brazilians;

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Brazilians; but the shell is thicker; and the flesh ill-flavoured, harsh, tough, and stringy.

CAPELAN. A name given by some naturalists to a small species of whiting, called by the Venetians *matlo*; and, by authors, *asellus omnium minimus*, and *merlangus*.

CAPELLA. See **LAPWING**.

CAPERCALZE. A provincial name for the cock of the wood.

CAPIBARA. Another name for the *cabiai*, or water-hog.

CAPIDODIUS. An appellation given by Paulus Jovius, and some others, to the fish called the *grampus* and *orca*. According to the Artedian system, it is a species of dolphin; and is distinguished by that author under the name of the dolphin with the snout bending upwards, and with broad serrated teeth.

CAPITO. This river-fish, better known by its English name, the chub, is also called *cephalus*, *squalus*, and *cyprinus*; and, in some places, the *chevin*. It is longer-bodied than the carp; its head is black, large, and somewhat flat; it is entirely destitute of teeth; its tail is forked; and all its fins are of a blueish black colour. It generally lodges under the coverts of old stumps of trees and hollow banks, and affords much diversion to the angler. It spawns in May, and is in the highest perfection in April; but is never esteemed a very delicate fish.

Capito is also a name erroneously given by some authors to the *mugil* or *mullet*. Gaza seems to have given rise to this mistake, by translating the word *Cephalus* from Aristotle by the term *Capito*, without considering that he confounded this fish with another.

CAPITO CÆRULEUS. A fish common in the Danube and other large rivers of Germany; and frequently called the *jentling*.

CAPITO RAPAX. The *piscis corvus* of some naturalists; a fish shaped somewhat like the common chub.

CAPO. An appellation given by Paulus Jovius to the fish called *coccyx* by the ancient Greeks, and *cuculus* by the Romans. It is a species of the *trigla*, distinguished by Artedi under the name of the red *trigla* with a bifid snout and striated coverings to the gills.

CAPON. A cock-chicken, castrated when young, and generally as soon as left by the dam. Capons, besides their use for the table, serve to lead chickens, ducklings, turkey-pouts, pea-hens, pheasants, or partridges, instead of their natural dams; over whom they have several advantages by the largeness of their bodies, which will cover thirty or forty young.

CAPONE. A name given by the Italians to the fish called *hirundo* and *corvus* by authors; and by Artedi considered as a species of the *trigla*. It is distinguished from the rest of this genus by that author under the name of the *trigla* with an aculeated head and with three appendages on each side of the pectoral fins.

CAPPANUS. An appellation given by some authors to the sea-worm which perforates the bottoms of ships, unless they are sheathed with copper.

CAPRA. The classical name for the goat.

CAPRICORNUS. See **MORDELLA**.

CAPRIMULGUS. An anomalous nocturnal bird, not agreeing with any of the rapacious kind, usually found in the Peak of Derbyshire, and other

C A R

mountainous places. In Shropshire it is called the *fern-owl*; and, in Yorkshire, the *churn-owl*, from the noise it makes in flying. It is a very beautiful bird; and, both in shape and colour, bears a stronger resemblance to the cuckoo than the owl, and is very easily distinguished from all other birds by the structure of its feet and wings. From the point of the bill to the extremity of the tail, it measures about eleven inches. The head is large in proportion; the bill is extremely small, and a little incurvated; the mouth and throat are very wide; the legs are small, and feathered half way down on the fore-side, the feathers depending almost to the toes, which are united from the divarication to the first joint; and the inner edge of the middle claw is serrated, as in herons.

CAPTAIN. A West Indian fish, entirely of a red colour; with only one fin on its back, which is very long when erected, and armed with large prickles: the gill-fins are of the same shape, by means of which it combats other fish. It is pretty much like the carp, being covered with scales like that fish; but it grows to the length of three feet, and is about thirty inches in circumference.

These fish swim in shoals, and ten or a dozen are commonly entangled in the same net. Some of them have been caught of the length of six feet, and thick in proportion, covered all over with spots twice as large as those of a carp. The flesh of the Captain is white, and well tasted.

CAPUENA. A fish caught among the rocks near the shores of the American seas. It generally grows to about five inches in length; is of a long, rounded shape; and is reckoned very delicious.

CAPWARD. A Brazilian animal, so called by the Portuguese, and described as an amphibious creature, with a body like a hog, a head like a hare, and without a tail. It almost constantly rests on its posteriors, like an ape. It lives in the sea in the day-time; and in the night season comes ashore, for the purpose of ravaging gardens. Its flesh is reckoned wholesome.

CARABUS. The name of a genus of four-winged flies belonging to the Linnæan order of *colcoptera*. The antennæ are oblong, slender, and setaceous; and the thorax is somewhat convex, margined, of a cordated figure, and truncated in the hinder-part.

CARACAL. An animal of the feline kind, sometimes called the *syagush*. It is a native of the East Indies; and resembles the lynx in size, in shape, and even in the singularity of being tufted at the ears. The Caracal, however, differs from that animal in the following particulars; that it is not mottled; that its hair is rougher and shorter; that its tail and muzzle are longer; that its physiognomy is more fierce; and that its nature is more savage.

CARACARA. A Brazilian bird of the genus of the hawk, called by the Portuguese *gavicaou*. It is of the size of the common kite, and has a tail nine inches long. The head is like that of the hawk; the beak is black, and hooked; the plumage is tawney, with white and yellow specks; and the feet are yellow, with semicircular long, sharp, black talons. This bird is very destructive to poultry.

CARANGUE. A West Indian white and flat fish, but having, notwithstanding, the eyes placed on each side of the head. It is from two to three feet long, eighteen inches broad, and six thick. The back-fins are very unequal; those on the gills

are pointed, and very near the head; and the tail is forked. These fish are found in great abundance near the Caribbee Islands. Their flesh is exceedingly good, and even preferable to our trout.

CARAPO. An American fresh-water fish, of which there are two species. The first has a long thin body, shaped like the blade of a knife; the back is thick; the belly is thin and narrow; the tail is pointed; the head is flat and pointed; and the lower-jaw extends farther than the upper. The mouth is very narrow; the under-jaw is furnished with very small sharp teeth, but there are none in the upper; the eyes are very small; and the body is covered with scales. The colour is brown, with a faint admixture of red; the back and head are somewhat blackish; and a dusky line runs all along the middle of the sides, under which the fish is speckled with black spots, each of the bigness of a mustard-seed. The usual size of this fish is about one foot in length, and two inches in breadth.

The other species differs very little from the former, except in being narrower in proportion to its length, and destitute of spots; and both are reckoned proper for food.

CARAPOPEBA. A small species of Brazilian lizard, supposed to be of a poisonous nature. The body is of a liver-colour, marked with several white spots; the tail is variegated with white and yellow; and the eyes are remarkably bright and vivid.

CARASSIUS. A genus of leather-mouthed fishes of the carp or bream kind, of which there are three species. It is a small fresh-water fish, about four or five inches long, with a flattened body, and a prominent back. It very much resembles the bream in its shape, but is somewhat thicker. It is of a pale yellow colour, but that of the belly is somewhat deeper than the rest of the body. The mouth is small and round; and the eyes are also small, and sunk in their orbits.

CARASSOW. An American bird, called by some the pheasant of that continent; by the Creoles, the mountain-bird; and, by others, the lesser wild turkey. The head and neck are black, resembling velvet; and there is a high crest of ruffled black feathers, of a semicircular form, with a white streak running through the middle, and parallel to the edges, and which the bird can either erect or depress at pleasure. The rest of the body, except the lower part of the cock, is black; and that of the hen is of a dusky brown. The tail is also black, except four white bars which run across it, near the extremity. The bill is thick in the upper-jaw, where there is a round excrescence as big as a hazel-nut. The eyes are black; the legs are pretty long; and the size of the body is not much less than that of a common turkey. The Carassow is easily tamed; and its flesh is esteemed excellent food.

CARAUNA. A small Brazilian fish, in many respects approaching to the turdus kind. Its colour is a fine bright red, entirely covered with small black maculae.

CARCAJOU. An animal of the feline tribe, about the size of a badger; having a tail so very long, that it will wrap several times round its body. This creature, which is of a reddish brown colour, is a formidable enemy to rein-deer, waiting whole weeks at a time for its prey, hid in the branches of some spreading tree; and, while the wild rein-deer passes underneath, it instantly drops down on it, and fixes its teeth and claws in its neck, exactly behind the horns. In vain does the wounded animal then attempt to fly; the murderer still main-

tains its former position; and though it often loses a part of its skin and flesh by being rubbed against the trees, it never quits its hold till its prey drops down through fatigue and loss of blood. The deer has but one method of escape, which is by jumping into the water, an element to which the Carcajou has a rooted aversion.

CARCARIAS CANIS. A species of shark.

CARDANES. A small insect resembling the beetle, very soft to the touch, and emitting a fragrant smell. It is of a blackish colour; and is very swift in its motions, having two short wings which do not nearly reach the tail. It is very remarkable, that the tail of this creature is of the same shape with the head; so that, when at rest, it appears as if furnished with two heads.

CARDINAL. A beautiful American bird, which abides in its nest throughout the winter, there subsisting on such provisions as it had collected during the summer, sometimes amounting to the quantity of a Paris bushel, which are artfully deposited, and covered first with leaves, and then with small branches. Two species of this bird have been noticed by naturalists.

CARDINAL, CRESTED. This bird is about the size of a grosbeak. The head is adorned with an upright crest, of a crimson-colour; and the cheeks and lower part of the neck are likewise red. The back and wings are cinereous; the breast and belly are white; the tail is long; the middle feathers are cinereous, and the exterior dusky; and the legs are of a flesh-colour. This beautiful creature is a native of the Brazils, and was first described by Buffon.

CARDINAL, DOMINICAN. This bird is of a moderate size. The upper mandible is dusky, or horn-coloured, and the lower whitish. The eyes are black, and the irides hazel; and the whole head is of a beautiful red or scarlet colour, which reaches down the fore-part of the neck and throat as far as the breast, and terminates in a point. The upper-side of the neck, the back, wings, and tail, are blackish. The quills which fall next to the back are bordered with white, as well as the covert-feathers next above them; the lesser covert-feathers of the wings and back have a small admixture of grey, by which they appear as if fringed; the tail-feathers are edged with white; and the sides of the neck, the breast, and the entire under-side as far as the tail, are purely white. It has four toes, three standing forward, and one backward, but all of a brown-colour. The Dominican Cardinal is a native of the Brazils, and has been described by Marcgrave under the name of the guiraticra.

CARDINALITIUS. A name given by some naturalists to the *coccythraustes Indica cristata*, commonly called the Virginian nightingale.

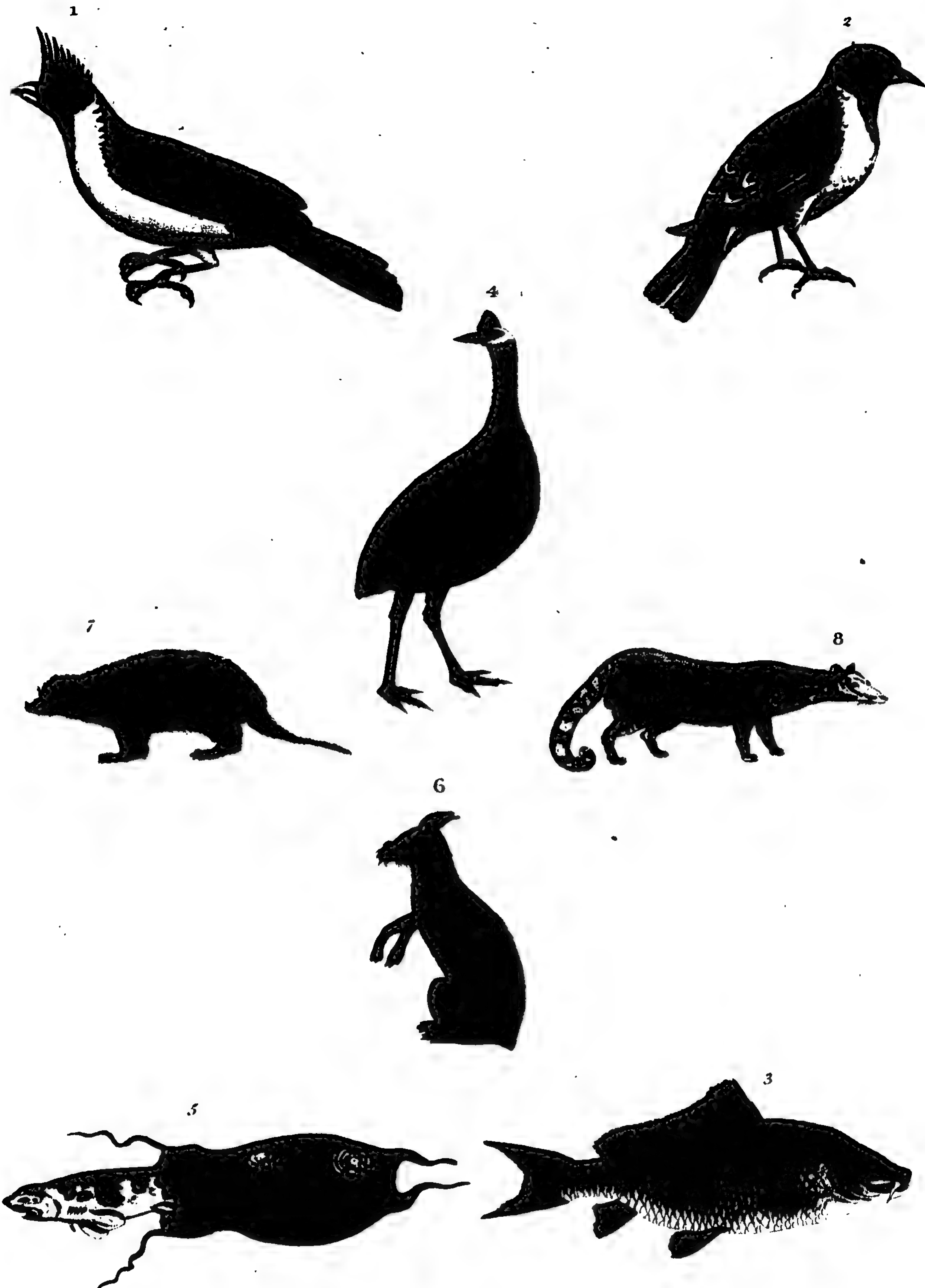
CARDIUM. A genus of worms in the Linnaean system, belonging to the order of testacea.

CARDUELIS. A well-known bird, called in English the gold-finch, and by ancient naturalists chrysomitres and acanthis; the first from its yellow head, and the last from its feeding among thistles.

CARETTA. See TORTOISE.

CARIAMA. A Brazilian bird of the size of a heron; and, like that bird, frequenting watery places. It makes a loud noise like the turkey, and is a species of the palamadea. Its flesh is extremely delicious.

CARIBOU. An American animal of the stag kind, chiefly found about Hudson's Bay, though it has been frequently seen in Canada. It is not quite



1. CRESTED CARDINAL. 2. DOMINICAN CARDINAL. 3. CARP. 4. CASSOWARY.
5. CAT-FISH. 6. PATAGONIAN CAVY. 7. CAYOPOLIN. 8. CIVET.

quite so tall as the moose-deer, and is in shape more like the ass than that animal. The tongue is esteemed a peculiar delicacy. The Caribou is amazingly swift; and has a sort of large, flat hoofs, furnished with very short hair between the divisions, which prevent it from sinking in the snow, on which it runs as fleetly as on firm ground.

Some think that this animal has a resemblance to the rein-deer of Lapland, though the horns are very dissimilar, especially in those which haunt the woods. The carcajou is an implacable enemy to this creature, and accordingly persecutes it on all possible occasions.

CARIGOY. An appellation by which some authors have described a very singular animal, a native of America, more usually known by the name of opossum.

CARP. One of the naturalized fish of this island, which was imported into it by Leonard Maschal about the year 1514; and is the most valuable of all kinds of fish for the stocking of ponds, because of its quick growth and prodigious increase. If the breeding and feeding of Carp were better understood and more frequently practised, the advantages would be very great, and fish-ponds no longer be deemed expensive. The sale of Carp constitutes a part of the revenue of the nobility and gentry in Prussia, Pomerania, Brandenburg, Saxony, Bohemia, Mecklenburg, and Holstein.

In order to reap every desirable advantage from this fish, particular attention should be paid to the soil, water, and situation of the Carp-pond: the most eligible ponds are those which are surrounded by the finest pastures or corn-fields of a rich black mould, having soft springs or running water on the spot, neither too cold, nor impregnated with acid, calcareous, selenitic, or other mineral particles. The water, indeed, may be softened by exposing it to the air and the sun in a reservoir, or by forming an open channel for it at some distance from the pond. The fish likewise should be sheltered from easterly and northerly winds, and be only exposed to the full influence of the sun.

Experience has evinced that it is most convenient to have three kinds of ponds for Carp; namely, the spawning-pond, the nursery-pond, and the main-pond. The first should be well cleared of every other species of fish, especially those of the rapacious kind, be plentifully supplied with soft water, and have a warm exposure. A pond of the extent of one acre requires three or four male Carp, and six or eight females; and so in proportion for every additional acre. The best breeding Carp are those which are five, six, or seven years old, with full scales, fine full eyes, and long bodies without any visible defects; and the pond should be stocked towards the end of March or beginning of April. Carp spawn in May, June, or July, according to the warmth of the season; and for this purpose they swim to a shady, warm, sheltered place, where they gently rub their bodies against the sandy ground, grass, or ozers, and by this pressure the milt issues out. The young fry, hatched from the spawn by the genial influence of the sun, should be left in this pond throughout the whole summer, and even the succeeding winter, if the water be sufficiently deep to prevent their suffocation under the ice during a severe one; otherwise the breeders and the fry should be put into separate ponds more commodious for their brumal habitations.

The second kind of ponds are the nurseries into

which the young fish should be removed in March or April, on a fine calm day, about the proportion of a thousand to a pond of one acre. When they are first put in, they should be well watched, and driven from the sides of the pond, lest they become the prey of rapacious birds; and in the space of two years they will grow to the weight of four, five, and sometimes six pounds.

The main-ponds should be stocked with such fish as are each about one foot in length, head and tail included. Every square of fifteen feet is sufficient for one Carp; and it is universally allowed, that their growth depends on the room, as well as the quantity of food allowed them. The best seasons for stocking the main-ponds are those of spring and autumn, when the fish continue to grow for a considerable time.

Carp are generally very long lived; and Gesner makes mention of one which was an hundred years old. They also grow to a very great size; and in this country some have been caught which weighed twenty pounds. Jovius says that, in the Lacus Larius, they are sometimes found of the weight of two hundred pounds; and Rzaczynski mentions some which were caught in the Dniester of the length of five feet. Carp are extremely tenacious of life, and will exist separate from their natural element for a considerable time. Experiments of this kind have been made, by placing them in nets, well wrapped up in wet mops, their mouths only remaining uncovered; and then hanging them up in a cellar, or some other cool place, feeding them at intervals with white bread and milk, and frequently plunging them into water. Carp, thus managed, have been known not only to have lived above a fortnight, but to grow exceedingly fat, and far superior in taste to those which were recently killed from the pond.

The Carp, as has been previously observed, is a prodigious breeder; and its quantity of roe has sometimes been so great, that when taken out and weighed against the fish itself, the former has been found to preponderate. From this spawn, caviare is made for the Jews, who hold the sturgeon in abhorrence.

These fish are excessively cunning, and on that account are by some stiled river-foxes. They sometimes leap over the nets, and by that means escape; and at others, they immerse themselves so deep in the mud, that the net passes over them. They are also very shy of taking a bait; though at spawning-times they are so very simple, that they suffer themselves to be tickled, handled, and caught with facility. They have been observed to mix their milts with the roes of other fish, from which a spurious breed is produced.

The Carp is of a thick figure; the scales are very large; and, when in full season, of a fine gilded hue. The jaws are of equal lengths; and there are two teeth in the jaws, or on the tongue; but at the entrance of the gullet, both above and below, there are certain bones, which act on each other, and comminute the food before it passes into the stomach. On each side of the mouth there is a single beard; and above these, on each side, there is another, but shorter. The dorsal fin extends far towards the tail, which is slightly bifurcated; the third ray of the dorsal fin is very strong, and armed with sharp teeth pointing downwards; and the third ray of the anal fin is of a similar construction.

CARPIONE. A name given by Salvian to the fish called by other writers carpio lacus Benaci.

It is the same with that called in some parts of England the red charre. Artedi distinguishes it from the other species of salmon, by calling it the small salmon with five rows of teeth in the palate.

CARRIER PIGEON. A variety of the common pigeon, so called from it's being employed in conveying letters from one place to another. It is in general larger than the other species, it's length from the tip of the beak to the end of the tail being frequently fifteen inches. It's flesh is firm, it's feathers are close, and it's neck is long and well turned. The upper chap of the bill is half covered, from the head downwards, with a white or blackish tuberos furraceous flesh, which projects over both it's sides on the upper-part, and terminates in a point about the middle of the bill; and this is called the wattle. The eyes are surrounded with the same sort of corrugated flesh, and their irides are red. The beak is long, straight, and thick; the head is narrow, long, and flat; the neck is long and thin; and the breast is broad. The colour of the Carrier Pigeon is chiefly black or dun, though there are some blue, white, and pyed.

The use of these Pigeons is of a very ancient date. Anacreon informs us, that he conveyed his billet-doux to his beautiful Bathyllus by a dove. Taurosthenes also, by means of a Pigeon which he had decked with purple, sent advice to his father, who lived in the Isle of Ægina, of his victory in the Olympic Games, on the very day he had obtained it. At the siege of Modena, Thitius without, and Brutus within the walls, kept a constant correspondence by means of these winged messengers, baffling every art of Antony, the besieger, to intercept them. There are numerous instances on record of the services rendered by these pacific birds during the crusades. Joinville relates one which took place at the crusade of St. Louis; and Tasso mentions another which was effected during the siege of Jerusalem.

This practice was formerly much in vogue in the East; and at Scanderoon, till of late years, these birds used to give the merchants at Aleppo more expeditious notice of the arrival of a ship than could possibly have been done by any other means of conveyance.

These Pigeons, however, are not now fostered with so much care as formerly, when they were sent from governors in besieged cities to generals who were coming to relieve them without, dispatched by princes to their subjects with the news of some fortunate event, or from lovers to their mistresses with expressions of their passion. The principal use now made of them in this country, is that of expediting the tidings of public executions to such persons as are concerned in them; much in the same manner as, when some ancient hero was about to be interred, an eagle was let off from the funeral-pile, in order to complete his apotheosis.

If we investigate the causes which produce this extraordinary quality in the Carrier Pigeon, we shall find them proceeding from it's attachment to it's native place, and particularly to that spot where it has nourished it's young. The bird is brought from the place where it was bred, and whither it is to be sent back for information. A letter is tied under it's wing, and the Pigeon is then emancipated. The little animal no sooner finds itself at liberty, than it's passion for it's native habitation directs all it's motions. It instantly mounts into

the clouds to an amazing height; and then, with the greatest certainty and exactness, directs it's course, by some surprising instinct, towards the place of it's abode, though at the distance of many miles. By what marks it is capable of discovering the place, or by what chart it is guided in a proper line, is to us utterly unknown: certain however it is that, in the space of half an hour, the Carrier Pigeon can perform a journey of forty miles, which is a degree of dispatch three times greater than the fleetest quadruped can accomplish.

CARTILAGINOUS FISHES. A particular class of fishes, in which the spine or back-bone is of the consistence of a cartilage, being hollow within, and containing medulla.

Cartilaginous Fishes are of two kinds; flat, as the raia or skate; and long and round, as the asellus or cod.

CARYOCATACTES. A bird of the magpie kind, of a brownish colour, beautifully variegated with white triangular spots, and very full of white feathers about the anus and the origin of the tail. It is very common in the mountainous parts of Germany.

CASPARGUS. A name borrowed from Ælian, and applied by Salvian to the fish commonly called sparus by naturalists. It is distinguished by Artedi under the name of the plain yellowish sparus, with a large annular spot near the tail.

CASQUE. A name sometimes given to a kind of murex, called the helmet-shell. There are several species, all approaching somewhat to a triangular figure, and smoother than the rest of the family of murices; and they are farther distinguished by having a sort of tubercles near the lip.

CASSANDRA. An elegant sea-shell, of the concha globosa, or dolium kind, more usually known by the name of the lyra, or harp-shell. There are three species; and they are supposed to receive the name of Cassandra from their being found on the shores of the Isle of Cassian.

CASSAON. A small fish of the shark kind, but infinitely less mischievous; called cucuri by the Brazilians.

CASSIDA. A genus of beetles, comprehended by Linnæus under the order of coleoptera in the class of insects.

Under this genus are comprehended all the clypeated beetles, or those covered with a hard crust, of which there are many species; but the most remarkable are the following.

CASSIDA BLACK, or SHIELD-BEETLE. This species, which has bristly feelers and a small roundish body, is of a dusky black colour. The cases of the wings are oblong, and slightly streaked with several small and very hollow spots. The shield is roundish, being somewhat broader than long, and rough on the upper-part, with a cruciated prominent edge; and sometimes there are two spots on the side towards the hinder-part, covered with yellow hair. The belly is black; but, when viewed in different lights, appears to have a silvery gloss. This beetle is found in country-houses, where it is very mischievous, frequently eating holes in woollen cloths and stuffs. When touched, though ever so gently, it draws up it's head and wings under it's body.

CASSIDA OVAL, PALE CLOUDED, with an undivided shield covering the head. The body of this small insect is of an oval shape, and a pale brown colour spotted and clouded all over with a more dusky hue, resembling in some measure the shell of a tortoise. The shield is semi-lunated, and

of a pale colour without spots; but the cases of the wings are streaked and speckled, the streaks running in crooked lines; and the feelers are slender, and of a black colour. It is found in beds of baum and mint, and on various hortulane productions.

CASSILI. A Philippine name for a species of water-raven, called also colocolo.

CASSIS LÆVIS. A name given by Rumphius, though very improperly, to the genus of shells called *dolia*, and *conchæ globosæ*.

CASSOWARY. A bird which inhabits the island of Java, and several parts of Africa, being one of the largest and heaviest of the feathered species. It is about five feet and a half long from the point of the bill to the extremity of the claws. The head and neck together are a foot and a half long; and the largest toe, including the claw, is five inches. The wing, which is in a great measure concealed under the feathers of the back, is so very small as to be almost imperceptible. Part of the feathers of other birds accelerate their flight, and are different from those which serve merely for a covering; but, in the Cassowary, all the feathers are of one kind, and externally of the same colour; they are also generally double, having two long shafts proceeding from a short socket fixed in the skin. Those which are double are always of unequal lengths, some being fourteen inches long, particularly on the rump; while others are not more than three. The beards which adorn the stem or shaft are, from about half way to the end, very long, and as thick as a horse-hair, without being subdivided into fibres. The stem or shaft is flat, shining, black, and knotted below, and from each joint proceeds a beard; and the beards at the extremity of the large feathers are perfectly black, and of a grey tawny colour towards their roots. The feathers on the head and neck are so short, as well as thinly dispersed, that the skin of the bird appears naked, except towards the hind-part of the head, where they are somewhat longer; while those on the rump are extremely thick, though in other respects they differ very little from the rest, except in being longer. The wings, when stripped of the feathers, are only three inches long. The extremities of the wings are adorned with five prickles of different lengths and thicknesses, bend like a bow, are hollow from the roots to the very points, and contain only that slight substance which is found in all quills. The longest of these prickles is eleven inches: it is a quarter of an inch diameter at the root; but, towards the extremity, the point seems broken off.

The most remarkable part of the Cassowary, however, is its head; which, though small like that of an ostrich, inspires some degree of terror. It is, as already observed, destitute of feathers, and armed with a kind of helmet of a horny substance, which covers it from the base of the bill to near half the head backwards. This helmet is black before, and yellow behind; and its substance is extremely hard, being formed by the elevation of the bone of the skull, consisting of several plates, one over another, like the horns of an ox. Some naturalists have supposed that this helmet is shed every year with the feathers; but the most probable opinion is, that it only exfoliates slowly like the beak. To the peculiar singularity of this natural armour of the animal may be added the colour of the eye, which is a bright yellow; and the

pupil being above an inch and a half in diameter, gives it an air equally fierce and extraordinary. At the bottom of the superior eye-lid there is a row of small hairs; over which is another of black hair, having pretty much the resemblance of an eyebrow. The inferior eye-lid, which is the largest of the two, is also furnished with a considerable quantity of black hair. The aperture of the ear is very large and open, being only shaded with small black feathers. The sides of the head, about the eye and the ear, which have no covering, are blue, except the middle of the lower eye-lid, which is white. The upper part of the bill is very hard at the superior edges, and its extremity is like that of a turkey-cock. The end of the lower mandible is slightly notched; and the whole is of a greyish brown, except a green spot on each side. As the beak admits of a very wide opening, this circumstance contributes greatly to the formidable appearance of the bird. The neck is of a violet-colour, inclining to that of slate; and red behind in several places, but particularly in the centre. About the middle of the neck before, at the rise of the large feathers, there are two protuberances formed by the skin, which somewhat resemble the gills of a cock, excepting that they are blue as well as red. The skin which covers the fore-part of the breast, on which this bird leans and rests, is hard, callous, and destitute of feathers. The thighs and legs, which are feathered, are extremely thick, strong, and straight, and covered with scales of various shapes. The toes, which are only three in number, are likewise covered with scales; and the claws are of a hard solid substance, externally black, and internally red.

If anatomically regarded, the other parts of the Cassowary are equally remarkable. It unites with the double stomach of animals which live on vegetables, the short intestines of those which live on flesh. The intestines of this bird are amazingly short; and the heart is not more than an inch and a half long, and an inch broad at the base. On the whole, it has the head of a warrior, the eye of a lion, the defence of a porcupine, and the swiftness of a courser. Thus formed for a life of hostility, for terrifying others, and for its own defence, it might naturally enough be concluded that the Cassowary is one of the most fierce and terrible animals of its kind; but nothing is so opposite to its natural character, nothing so different from the life it is contented to lead. It never attacks other birds; and, instead of its bill, when attacked, it makes use of its legs, and either kicks like a horse, or runs against its pursuer, beating him down, and treading him under its feet.

Nor is the motion of this animal less extraordinary than its appearance. Instead of going directly forward, it seems to kick up behind with one leg; and then making a bound onward with the other, it advances with such prodigious velocity, that the swiftest racer would be left far behind it.

The Cassowary is so little susceptible of the sense of tasting, that it indiscriminately swallows every thing within its reach. The Dutch assert, that it not only devours glass, iron, and stones, but even burning coals, without either betraying the smallest symptoms of fear, or receiving any injury. It is said that the passage of food through its gullet is performed so rapidly, that even the very eggs which it swallows pass through it without the slightest visible alteration. In fact, the alimentary canal of this animal, as before observed, is most remarkably

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ably short; and perhaps many kinds of food are indigestible in it's stomach which have not been previously masticated.

The eggs of the Cassowary are of a grey ash-colour, inclining to green, and marked with a number of little tubercles of a deep green: the largest measure about fifteen inches round one way, and twelve the other; and, considering their size, their shells are remarkably thin.

The southern parts of the farthest Indies seem to be the natural climate of this extraordinary bird; and it's domain, if we may so call it, begins where that of the ostrich terminates. The latter has never been found beyond the Ganges; while the Cassowary is never seen nearer than the islands of Banda, Sumatra, Java, and the Moluccas: yet even there this bird seems not to have multiplied in any considerable degree; and is considered as a curiosity in the very country of which it is a native.

CASTAGNOLE. The Italian name of the fish called chromis by the generality of authors; and reduced by Artedi to the genus of the sparus: he distinguishes it by the name of the sparus with the second ray of each belly-fin extended to a considerable length.

CASTOR. A name sometimes given to the beaver, in which the drug castor is found.

CAT. This animal is principally distinguished by it's sharp and formidable claws, which it possesses the faculty of extending or concealing at pleasure. Cats lead a ravenous and solitary life; neither uniting, like vegetable feeders, for their mutual defence; nor, like those of the dog kind, for their reciprocal support. The dog, the wolf, and the bear, will sometimes live on farinaceous food; but all animals of the Cat kind, such as the lion, the tiger, the leopard, and the ounce, devour nothing but flesh; and, except at certain seasons, are enemies to each other.

These creatures are in general fierce, rapacious, subtle, cruel, and utterly incapable of adding to the stock of human happiness; it is probable, however, that even the fiercest of them might be rendered domestic, were the experiment adequate to the trouble. Lions have been yoked to the chariots of conquerors, and tigers taught to tend those herds which they naturally destroy.

All animals of the Cat kind are nearly allied to each other, though differing both in size and colour; they are also equally fierce, artful, and rapacious; and whoever has seen one, may judge of all. In other creatures, many changes are wrought by human assiduity: the dog, the hog, or the sheep, are altered in their natures and habits conformably to the necessities or caprices of mankind; but all creatures of this kind are inflexible in their forms, and strongly impressed with an air of natural wildness.

Animals of the Cat kind are remarkable for the sharpness and strength of their claws, which they thrust from their sheaths whenever they seize their prey. They are also equally remarkable for the roundness of their heads, the shortness of their snouts, and the large whiskers which grow on their upper lips. They have each thirty teeth, which are very formidable, but much less calculated for masticating than tearing their food. With respect to the dog kind, their greatest strength lies in their under-jaws; but, in the feline species, in their claws, which they extend with facility; and their gripes are so very powerful, that no human efforts can disengage them. They are not, however, endued

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with the swiftness of most other animals; but generally owe their subsistence rather to catching their prey by surprize than fairly hunting it down: all of them seize it with a bound, at the same time expressing their savage pleasure by a roar; and their first grasp generally disables the captive from all resistance. With all these qualifications for slaughter, they nevertheless seem timid and cowardly, and seldom make an attack till there is every probability of success; for when the force against them is superior, or even equal to their own, they have recourse to flight.

CAT, COMMON. This well-known animal has long been domesticated. Indeed, it is the only creature of it's kind whose services can compensate for the trouble of bringing it up, and whose size is too inconsiderable to render it formidable. Though easily offended, and often capricious in it's resentments, it is not endowed with power sufficient to capacitate it for much mischief. Of all animals; when young, there is none more sportive than the kitten; but, as it grows up, it seems to lose this disposition, and the innate treachery of it's kind is then seen to prevail. Being naturally ravenous, education teaches it to disguise it's appetites, and to watch the favourable moment of plunder; supple, insinuating, and artful, it has the cunning to conceal it's intentions till it can effectually put them in execution; and, when opportunity offers, it at once seizes on whatever comes in it's way, flies off with it, and continues in solitude till it supposes the offence is forgotten. The Cat has only the mere semblance of attachment; and, from it's timid approaches and suspicious looks, may easily be perceived either to dread it's master, or distrust his kindness: it is assiduous rather for it's own pleasure than from a desire of pleasing; and it often gains confidence only to abuse it.

The form of the body, and the temperament of this animal, correspond with it's disposition; active, cleanly, delicate, and voluptuous, it is very fond of ease, and always makes choice of the softest bed. Many of it's habits, however, are rather the consequences of it's formation than the result of any perverseness in it's disposition: it is timid and distrustful, because it's body is weak, and it's skin tender; and a blow will hurt it infinitely more than a dog, the hide of which is thick, and it's body muscular.

The Cat goes with young fifty-six days, and seldom brings forth more than five or six at a time. The female usually hides the place of her retreat from the male, who often devours the kittens. She feeds them for some weeks with her milk, and with whatever small animals she can catch by surprize; and early accustoms them to rapine. Before they are one year old, they are fit to engender; the female seeks the male with cries, and their amorous intercourse is well known to be attended with the most disgusting noise. They live to about the age of ten years, during which period they are extremely vivacious, and will endure incredible cruelties before they resign their breath.

Cats no sooner arrive at maturity, than they shew a disposition for rapine; they often look wistfully towards cages in which birds are confined, sit continually at the mouths of mouse-holes, and soon acquire from nature every quality requisite to render them compleat hunters. Indeed, their dispositions are so incapable of constraint, that all instructions are lost on them. The Greek monks of the isle of Cyprus, it is said, teach Cats to hunt

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hunt serpents; with which reptiles that island is greatly infested; but this quality may perhaps be natural to these creatures, and not the effect of discipline. Whatever animals are considerably weaker than themselves, prove to them indiscriminate objects of slaughter. Birds, young rabbits, hares, rats, mice, bats, moles, toads, and frogs, are all equally pursued; though, perhaps, not equally acceptable. The mouse seems to be their favourite game; and though Cats possess the sense of smelling but in a mean degree, they nevertheless know those holes in which their prey reside; and they will sometimes wait patiently for a whole day together, seemingly quite motionless, till the victims come within their reach, when they are instantly seized with a bound. The fixed inclination which Cats discover for this peculiar manner of pursuit, arises from the conformation of their eyes. The pupil in man, as in most other animals, is capable of but a small degree of contraction and dilatation; it enlarges a little in the dark, and contracts when the light pours upon it too profusely: but, in the eyes of Cats, this contraction and dilatation is so considerable, that the pupil, which by day appears narrow and small, by night expands over the whole surface of the eye-ball, and gives the eyes a fiery appearance. By means of this peculiar structure, their eyes are better adapted for vision in darkness than in light; and the animals are thus fitted for spying out and surprizing their prey.

Notwithstanding the Cat is a household animal, it cannot properly be called a dependant: though perfectly tame, it does not acknowledge any obedience; but, on the contrary, is entirely swayed by it's own caprice, no art being sufficient to controul any of it's inclinations. If the inhabitants quit the house, the Cat still remains; and, if carried elsewhere, it appears for a time bewildered with it's situation, till it becomes acquainted with the retreats of it's prey, as well as with all the little holes and labyrinths through which an escape may be effected.

The Cat is equally afraid of water, of cold, and of particular smells. It loves to bask in the sun, to get near the fire, and to rub itself against perfumed substances. It is also excessively fond of particular plants, such as valerian, marum, and Cat-mint; against which it rubs itself, smells them at a distance, and exhibits every sign of rapturous intoxication.

As the teeth of the Cat are rather formed for tearing than chewing it's aliments, it eats but slowly, and with some difficulty; and for this reason it loves the most tender food, particularly fish, which it devours as well raw as boiled. It's sleep is very light: it often affects a dormant posture, the better to deceive it's prey; and, in the act of walking, treads very softly, and without noise. It's fur is usually sleek and glossy; and on this account it's hair, which is easily electrified, sends forth scintillations when rubbed in the dark. Linnaeus informs us, that the Cat washes it's face with it's fore-feet at the approach of a storm; but this observation would, in our opinion, have with more propriety dropped from a house-matron than a naturalist, for the rubbing of it's face appears to be only one of it's instinctive habits.

The Cat was an animal very highly esteemed by our ancestors; and, according to the laws of Howel, the price of a kitten, before it could see, was to be one penny; till it caught a mouse, two-pence; and,

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when it commenced mouser, four-pence: it was also required that the creature should be perfect in it's senses of hearing and seeing, have it's claws compleat, and be an expert mouser and a good nurse. If it proved defective in any of these qualities, the seller was to forfeit to the buyer one-third of it's value; and if any one stole or killed the Cat that guarded the prince's granary, he was to forfeit a milch-ewe, with it's fleece and lamb; or as much wheat as, when poured over the Cat suspended by the tail, and the head touching the floor, would form a heap high enough to cover the tip of the former. From hence, besides a pleasing picture of the simplicity of the times, we discover a strong argument that Cats were not naturally bred in our forests: an animal which could be so easily taken, could never have been so highly rated; and the precautions laid down to improve the breed would have been superfluous with respect to a creature which multiplies in such an amazing degree.

Though this animal is an object of aversion to multitudes, it is a singular favourite of the Mahometans; and Maillet, after expatiating largely on the beauty of Egyptian Cats, adds, that the inhabitants build hospitals for them. The destruction of the Cat was most severely punished by the ancient Egyptians: whether the death of that animal had been occasioned through inadvertency, or otherwise, the person who had killed it was accounted equally culpable; and that crime could only be expiated by the most cruel torments. 'When the Cat dies a natural death,' says Herodotus, 'all the people of the house where that accident has happened, shave their eye-brows, as a token of sorrow; and the Cat is embalmed, and honourably interred.' The veneration of the Egyptians for this creature was founded on an opinion prevalent among them, that Diana, in order to avoid the fury of the giants, had concealed her divinity under the form of that animal; and the God-Cat was sometimes represented among them by it's whole native form, and sometimes by the body of a man bearing the head of a Cat.

CAT, ANGORA. The hair of this animal is long, and of a silvery whiteness and silky texture, forming a fine ruff about it's neck; and that on the tail is very long and spreading. It grows to a considerable size; and is found in Angora, the same country which produces the fine-horned goat. After the first generation, it usually degenerates in our climate. A variety of this genus is found in China, having pendent ears; of which the Chinese are very fond, and ornament their necks with silver collars. This creature is a great destroyer of rats, and seems to be the same with the domestic animal which the Chinese call *sumxi*.

CAT, BLUE. A species of the feline tribe, found in Persia, particularly in the province of Chorazan, of the figure and shape of the common Cat, but infinitely more beautiful in the lustre and colour of it's skin, which is a grey blue without mixture, and as soft and shining as silk. The tail is very long, and covered with hair six inches in length, which the animal throws upon it's back like the squirrel. These Cats are well known in France; and have been imported into England under the name above-mentioned.

CAT, WILD. This animal, in it's savage state, is considerably larger than the domestic Cat; and it's fur being longer, it on that account appears larger than it really is. It's head is also bigger, it's face is flatter, and it's teeth and claws are much more formidable

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formidable than those of that animal. Being formed for rapine, it's muscles are very strong; and it's tail, which is of a moderate length, is very thick and flat, marked with alternate bars of black and white, the tip being always black. The general colour of this animal, in England, is a yellowish white, mixed with a deep grey; and the fur is very soft and fine. Though these colours appear at first sight to be confusedly blended together, on a closer inspection they will be found to be disposed like the streaks in the skin of the tiger, pointing from the back downward, rising from a black list which runs from the head along the middle of the back to the tail.

This creature, which inhabits the most mountainous and woody spots, lives chiefly in trees, feeds only by night, and is the most destructive of all carnivorous animals in this kingdom. It does not specifically differ from the tame Cat; the latter being originally of the same kind, but only varying in colour, and some other trifling accidents common to domesticated animals. The Wild Cat multiplies as fast as the domestic one, and has been often known to breed with it. This animal was formerly reckoned among the beasts of chase; as appears by a charter granted by Richard II. to the Abbot of Peterborough, permitting him to hunt the hare, the fox, and the Wild Cat; and, according to authentic records, it seems to have been the object of the sportsman's diversion even in much earlier times. It is probable, however, that those were not original inhabitants of this kingdom, but first introduced in a domestic state, and afterwards became wild either through ill usage or neglect.

The Cat is one of those few animals which are common to the new continent as well as the old; for when Columbus first discovered that country, a hunter presented him with one captured in the woods, which was of the ordinary size, and had a long thick tail.

CAT, WILD, OF LOUISIANA. This animal, which resembles the marmot rather than the Cat, is only nine or ten inches high, and eighteen long; and it's head is like that of a fox. The flesh of these creatures is esteemed proper for food; and those which are tamed become extremely familiar and sportive.

There is another species of Wild Cat found in North America, entirely different from that of Europe, being larger, more nimble and ferocious, and having a very short tail. This animal screams in a very dismal manner, especially in the night-time; runs up trees with great agility, and generally takes it's food by surprise. It is spotted like a leopard, and it's skin is applied to various beneficial purposes.

CAT, WILD, OF THE CAPE OF GOOD HOPE. There are several varieties of this animal; but they are either so negligently or unscientifically mentioned, as to render it impossible for a zoologist to give a proper description of them. Kolber mentions two kinds; one of which he calls the Wild Red Cat, distinguished by a bright red streak running along the ridge of the back to the tail, and losing itself in the grey and white on the sides. Their skins are said to afford relief in gouty cases; and, on that account, are much valued at the Cape. To the other variety he gives the name of the Bush Cat, of which he only informs us that it is the largest of all the Wild Cats in the Cape countries.

CAT, TIGER. This animal is also called the Cat of the Wood, because it usually frequents

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woods and groves. It is spotted nearly like the tiger; and it's skin is covered with excellent fur, which is used as well for warmth as ornament, and is extremely valuable.

CAT, MOUNTAIN, OR CATUS PARDUS. An American animal, two feet and a half long from the nose to the root of the tail, about eighteen inches high, and having a tail eight inches long. In shape and appearance, it bears a strong resemblance to the common Cat, except that the tail is shorter in proportion to the body. The hair or fur is of a reddish colour; but that of the belly and the insides of the fore-legs is whitish; and that under the throat and lower-jaw is entirely white. The whole skin is beautified with black spots of different figures, of an oblong shape on the back, and roundish on the belly and paws. On the ears there are several transverse black stripes; but, in other respects, they resemble those of the European Cat. The whiskers are short; and there is no long hair on the eye-brows and cheeks, as in the common Cat. All the intestines seem of an equal thickness, being two-thirds of an inch in diameter; and even the rectum and colon are only one-third of an inch thicker than the rest. The stomach is very large; and in the sinuosity, between the upper and lower orifice, there is a membrane filled with fat, which unites them together.

This creature is of a mild and gentle nature, and becomes very corpulent.

CAT, CIVET. This animal has short round ears, light blue eyes, and a sharp nose tipped with black. The sides of the face, the chin, breast, legs, and feet, are black; and the rest of the face, as well as part of the sides of the neck, are white tinged with yellow. From each ear run three black stripes, which terminate at the throat and shoulders. The back and sides are cinereous, tinged with yellow, and marked with large dusky spots, disposed in rows. The hair is coarse; but that on the top of the body is longest, and stands up like a mane. The tail is sometimes wholly black, and at others spotted near the base. It's length, from the nose to the tail, is about two feet three inches; the tail itself is fourteen inches long; and the body is pretty thick.

The Civet Cat inhabits India, the Philippine Isles, Guinea, Ethiopia, and Madagascar. The celebrated drug, musk or civet, is produced from an aperture between the genitals and the anus, in both sexes, secreted from several glands. Those who keep these animals, procure the musk by scraping the inside of this bag twice a week with an iron spatula, and collect about a drachm each time, but it is seldom sold pure, being generally adulterated with oil or suet, in order to render it heavier. The males yield the largest quantity; especially when they are previously irritated. When young, they are fed with pap made of millet, and a little fish or flesh; when old, with raw flesh; but, in a wild state, they prey on fowls. Several of these animals, which, to all external appearance, seemed females, were dissected by the members of the Royal Academy at Paris: the parts of generation in the males were hid within the body; or rather, there was not the least sign of any distinction of the sexes. The opening of the pouch or bag, which is the receptacle of the civet, was under the anus, and not under the tail, as some authors have maintained. Under it there was another small aperture, at the distance of two inches and a half; and the pouch itself was two inches and

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and a half broad, and three long. It's opening made a chink, from the top downwards, two inches and a half deep; and it was covered round the edges, and internally, with short hair. When the two lips were drawn asunder, the inner capacity might be seen, which was large enough to contain a puller's egg. The bottom was pierced to the right and left with two holes capable of admitting the point of the little finger, each of which penetrated into a bag covered with a white skin like that of a goose. The eminences formed by this inequality were pierced with pores, from which might be squeezed the scented fluid, called ribet by the Arabians, from which the English term Civet is derived.

Buffon describes another variety of this animal, which he calls the zibet, and which differs from the other in having a more slender body, a thinner snout, large high ears, a longer tail, and the hair all over the body of an uniform length.

CAT, SEA. The Sea-Cat is about half the size of the sea-lion, but thicker about the breast and towards the tail; the snout is also longer than that of the sea-lion, and the teeth are larger; the eyes are like those of the cow; the ears are short; the paws are naked and black; and the hair is black mixed with grey, very short and brittle. The young are of a blueish-black colour.

Sea-Cats are caught in the vicinity of the River Shupanova during the spring and autumn, at which seasons they migrate from the Kurilskoy island to the American coast; but they are taken in greater numbers about the Cape of Kronotzkoy. Almost all the females which are caught in the spring are pregnant; and such of them as are near bringing forth are immediately opened, and the young taken out and skinned. The females suckle their young with two teats, which are placed between their hinder paws; and they seldom have more than one at a time. Their young see as soon as they are whelped; and they have thirty-two teeth, exclusive of their tusks, two of which are on each side, and begin to appear the fourth day after their birth. Their colour is at first a dark blue, but in the space of four or five days grey hairs begin to appear between their hinder legs; and, at the end of one month, their bellies are black and grey. The male is larger and blacker than the female, who, as she grows up, turns almost of a blue colour, having only grey spots between her fore-legs. The male and female differ so much in the form and strength of their bodies, that, if not carefully examined, they may readily be taken for different species. One male has generally from eight to fifteen, and even sometimes fifty, females, over whom he watches with such jealousy, that no strangers are suffered to approach them; and though many thousands lie on the shore, every family keeps apart; that is, the male, with his wives, young ones, and those of a year old, who have not yet attached themselves to any male; so that a single family sometimes consists of not less than one hundred and twenty. They likewise swim at sea in prodigious droves; and the old ones live apart, and sometimes sleep a whole month together without food. These creatures are amazingly fierce, attacking all who pass them; and so obstinate are they, that they will rather die than quit their places. When they perceive any person approaching, some of them rush on him, while others lie ready to assist their companions. They bite the stones which are thrown at them; and though their teeth, or even their

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eyes, are struck out, they will not quit their stations: nor dare they; for, at every step any one of them moves off, he is sure to create himself a new enemy; so that, could he escape the fury of human attacks, his own companions would inevitably destroy him. If any one of them makes a shew of retiring, the others draw near, in order to prevent him; and, if any one seems to suspect the courage of another, he falls on him, and chastises him. This suspicion of each other is sometimes carried so far, that for a furlong's length nothing is to be seen but bloody fights; and, on such occasions, the combatants may be passed without danger. If two attack one, some of the rest always support the weakest, for they do not allow of unequal combat; and, during such contests, those Cats which are swimming in the sea raise their heads, in order to look at the behaviour of the combatants; till at length, becoming fierce themselves, they forsake the water, and increase the number of such champions.

Mr. Steller made the following experiment. With his Cossacks he attacked one of the Sea-Cats, put out it's eyes, and irritated four or five more by throwing stones at them. When these creatures pursued him, he ran towards the blind one; which hearing the running of it's companions, and not knowing whom they pursued, attacked them. Mr. Steller then retired to an eminence, from which he observed the battle for some hours. The blind Cat assaulted it's companions indiscriminately, even such as took it's part; so that at length they all fell on the blind animal, and allowed it no rest either on the land or in the sea; out of which last they dragged it on shore, and tore it to pieces.

When only two of these animals engage, the battle frequently lasts for an hour: during which they sometimes rest a little, and lie down near each other; and afterwards they both rise at once, and renew the engagement. They generally fight with their heads erect, and turn them aside from the strokes of each other. So long as their strength remains equal, they contend with their fore-paws; but, when one party becomes weak, the other seizes it's antagonist with it's teeth, and throws it on the ground: and whenever their companions observe this, they fly to the assistance of the vanquished. The wounds inflicted with their teeth are generally as deep as those of a sabre; and, at the conclusion of these skirmishes, they throw themselves into the water, in order to wash their bodies.

The accidental causes of the contentions of these creatures are in general the following. The first and most bloody is on account of their females, when one of them endeavours to carry off the mistress of another, or the young ones that are females, who always follow the conqueror. The second respects their places of retreat, when one approaches too near another; of which encroachments they never admit, either for want of room, or because they are jealous of each other's proximity to their respective mistresses. And the third relates to their endeavouring to do justice to each other, and to the compromising of their quarrels.

The male Cat is very fond of his offspring; but both the females and the young fear him extremely, as he sometimes treats them most tyrannically. When any person endeavours to catch one of their young, the male stands on the defensive, while the female attempts to save herself and her brood by flight; but, if she happens to drop the young one

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out of her mouth, the male immediately leaves his enemy, and seizing on her with his teeth, beats her against the stones till he leaves her for dead. As soon, however, as she recovers, she crawls to his feet, which she licks, and washes with her tears, which flow in abundance. In the mean time, the male stalks backwards and forwards, gnashing his teeth, and tossing his head like a bear; till at last, on perceiving that his antagonist has carried off the little one, he also begins to weep.

When the Sea-Cat lies on the shore, and diverts itself, it lows like a cow; when it fights, it growls like a bear; when it has vanquished its enemy, it chirps like a cricket; but, when it is itself vanquished or wounded, it groans or mews like a common Cat; and, when it quits the water, it generally shakes itself, strokes its breast with its hinder paws, and smoothes the hair on it. The male, when sleeping, lays his snout to that of the female, as if in the act of kissing her; and, when lying in the sun, they hold up their paws, and wag them as dogs do their tails. They do not, however, sleep sound; and their smell and hearing are surprizingly acute.

These animals swim so very fast, that they can easily accomplish ten miles in an hour; and when they happen to be wounded at sea, they seize the fishing-boats with their teeth, and drag them along with such swiftness, that they appear to fly, and not to swim on the water; and by this means a boat is frequently overturned, unless the steerman is very skilful. As they are furnished with a foramen ovale, they can continue very long under water; but, whenever they grow weak, they arise to the top, in order to imbibe fresh air. They often swim on their backs, and so near the surface of the water, that their hinder-paws are frequently dry. When they first go into that element, they turn themselves like a wheel, after the example of many other large sea-animals; and, when they quit it, they fasten their fore-paws into the rocks, and thus draw up their bodies, which they can move but slowly in such situations; though they are remarkably swift in their motions on plain ground.

The manner of catching these creatures, in Bering's Island, was thus: the natives first struck out their eyes with stones, and then beat out their brains with clubs. But this business proved so difficult, that it required at least three hundred strokes; and though sometimes their skulls were broken in pieces, and all their teeth beat out, they would still keep their places, stand on their hinder paws, and endeavour to defend themselves: one of them, thus treated, lived full two weeks. The people of Kamtschatka kill them with harpoons: some, however, die through age, though much the greater number expire with wounds they receive in quarrels.

CAT, FLYING. This animal appears to be a species of bat, having its wings, both internally and externally, covered with fine soft hair of a reddish grey colour. The wings of one of these bats, when measured by Clusius, were twenty-one inches long, and nine broad. The head resembles that of a wild Cat; the ears are of a middling size; the eyes are large and shining; and the fore-feet, together with the tail, are united to the membranous wings, inasmuch that every part of this creature assists it in flying. The breasts of the female are large and round; the membranous wings seem to be dentated on the edges; but the interior surface is left downy, and not of so deep a yellow as the exterior.

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In some of these animals, the mouth is obtuse, and approximates to the shape of that of a Cat; and, in others, it is long and narrow, and greatly resembles that of a fox. This animal delights in caverns and subterraneous retreats, where it lies hid during the winter; and, like the bat tribe, only flies abroad about the dusk of the evening.

CAT-FISH, GREATER. This creature, which seems to be a species of shark, is by some naturalists called the dog-fish. The upper-side of the back is of a brownish colour, variegated transversely with broken irregular bars of a darkish colour; and the belly or under-side is white. There are faint indistinct lateral lines passing from the eyes to the tail. The nostrils have slits which communicate with the mouth; and five openings on each side of the head form the gills. It has two single fins on the back, one behind the other; and on the belly there are two pair of fins, between the hindermost of which the vent is placed. It has likewise a single fin on its under-side, near the tail; the tail-fin is of a peculiar formation; and all these members are furnished with dusky spots. This fish proceeds from an egg of a horny substance of a red-brown colour, shaped like a purse, and flatted and edged on its sides. The skin of the Cat-Fish is sensibly rough to the touch; and the teeth, which are very sharp, consist of several rows, like those of the shark. It is found on several of the British coasts, and likewise near the Cape of Good Hope; whence we may conclude, that it is a general inhabitant of the seas both in the temperate and torrid zones.

CAT-FISH, GREATEST. This fish differs from the former in being of an ash-colour, in having larger and fewer spots, a longer and thicker snout, and nostrils at a considerable distance from the mouth.

CAT, SEA. A fish of a very singular shape, with eyes extremely large in proportion to the body. The back is of a purple colour; the belly is blue, spotted with purple; and the tail is very broad. This fish is not furnished with any fins, except on the tail and the fore-part of the head; on which last there are seven, pointing directly forward like the feelers of shrimps. Another variety of this fish is of a still more extraordinary figure. The back-part forms an oval lump, on which the head seems to hang; it has long large eyes; and a smooth skin inclining to blue on all parts of the body, except the belly, which is brown. The entrails contain a glutinous matter, of which the Chinese make ink.

CATANODROMI. A term of the same signification with Anadromi, the distinctive name of a tribe of fishes which at times leave the fresh water for the salt, and afterwards return to the former again.

CATARAETA. A bird of the gannet kind, so called by Aldrovandus. It resembles the wood-pigeon so exactly, that it can hardly be distinguished from it, except by the inferiority of its dimensions. Indeed, Mr. Ray suspects it to be same; and the rather, as its description was only taken from a picture.

CATARACTES. A name given by some authors to the large sea-gull; called in Cornwall, in which county it is very common, the gannett.

CATCH-FLY. A tribe of birds common to almost every country in the known world; but the species are most numerous in the warmer climates, where the alternate extremes of heat and humidity are very favourable to the propagation of insects, the usual food of these birds. See FLY-CATCHER.

CATERPILLAR.

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CATERPILLAR. Every butterfly must pass through the Caterpillar state before it arrives at its beauty and perfection; and, in the same manner, all the known winged animals, except the puceron, undergo a reptile state, none of them being produced in a winged form.

For a description of the common Caterpillars, which produce butterflies and moths, see the article **BUTTERFLY**.

CATERPILLAR, WATER. It may perhaps seem incredible to many, that Caterpillars should be capable of existing entirely under water; but experience and observation prove to a demonstration, that they not only live in that element, but that they devour aquatic plants in the same manner as their kindred tribes do land ones. Nor is the appellation given to these insects an improper one, as is frequently the case with respect to larger aquatic animals; but they in every sense justify their title, as they do not respire after the manner of the fish tribe, but by their stigmata, like other Caterpillars.

The penetrating Reaumur, in his observations, met with two species of these insects; the one on the potamogiton, or pond-weed; and the other on the lenticula, or duck-meat. Both of these appeared to be very industrious animals; but the first being the largest, its operations were distinguished with greater facility than those of the last. Though truly an aquatic animal, it swims but very indifferently, and seems rather averse to the element in which it resides.

The parent butterfly lays her eggs on a leaf of the potamogiton; and, as soon as the young Caterpillar is hatched, it gnaws out a piece of the leaf, of a roundish figure, which it carries to another part of the same leaf, and lays it in such a manner that there may be an interstice left in which it may lodge itself. It then affixes this fragment to the larger leaf, by means of silk of its own spinning, only leaving a hole from which it can protrude its head and consume the surrounding leaves. Though this aperture is very small, it easily disengages itself, since a little exertion bends the upper as well as lower leaves, both being flexible; and, when the creature quits its cell, it has a sort of down which defends it from rain; and the natural elasticity of the leaves and silk close the aperture again, so that no water can penetrate. The leaves of this kind of plant are also very slippery, and resist the wet in the same manner as if they were oiled. However, it soon happens that this habitation becomes too small for the animal; in which case it forms another, and, at proper intervals, others adapted to its size. The subsequent changes into the chrysalis and butterfly states are effected in the usual way. The butterfly quits its last shell, which was placed on the surface of the water; and the lightness of the animal easily sustains it on the liquid element till its wings are dried, when it becomes a denizen of the sky.

CATERPILLAR, WOOD. A genus of insects living in a different manner from those which subsist on leaves and plants; being concealed under the bark, roots, trunks, branches, and even fruits of trees. They are easily distinguished from those worms and maggots which are commonly found in roots and fruits, and owe their origin to a different kind of flies, but they are liable to be confounded with a species of animals, called by Reaumur false or bastard Caterpillars, which very much resemble the real Caterpillars, except that they have a greater

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number of legs, and are finally transformed into four-winged flies, which are different from the real butterflies.

The winged insects which give birth to those Caterpillars that live immured in trees or fruits, lay their eggs on the surface; and the young Caterpillars, as soon as hatched, begin to eat their way into the substance. But, what appears most singular, is, that there is usually no more than one Caterpillar in a fruit, though it be large enough to afford food for several; and if two of these creatures are sometimes found enclosed in it, one of them is commonly a Caterpillar, and the other an animal of some other kind. The reason of this seems to be, that the operation of penetrating into the fruit is so difficult to the young animal, that it seldom succeeds; and though the butterfly deposits a great number of eggs on each fruit, and these are in general hatched, the rind is commonly too strong for the insect to perforate.

When once lodged in their prison, these animals consume the substance which incloses them at their leisure, leaving the outer shells uninjured; and this is frequently the case in grains of corn, where the mealy substance serves as aliment, and the exterior skins become firm coverings for the animals. The mealy substances, in this respect, usually prove sufficient for the animals in their Caterpillar state; but should they prove deficient, the creatures have recourse to the very singular expedient of devouring their own excrements, and thus separating nourishment from that very matter which had before passed off from their stomachs in an undigested state.

Some Caterpillars of this kind quit their retreats, in order to change into their chrysalis, and thence into their butterfly state; but the greater number remain there, and pass through all their changes in confinement. These Caterpillars, like all the other kinds, find very formidable and destructive enemies in a certain tribe of worms; and, on opening the excavated fruit, instead of the expected Caterpillar, it is not unusual to find a fly just ready to fall out, which has been produced from the chrysalis of a worm that had previously found its way into the fruit, and devoured the Caterpillar, its original inhabitant.

CATERPILLAR EATERS. A name given by some authors to a species of worms bred in the bodies of Caterpillars which devour their substance. These worms originate from certain flies which deposit their eggs in these animals; and after the usual transformations, assume the parental form.

Reaumur, in his History of Insects, has given a very curious account of these little worms; to which he gives the name of the ichneumon of Caterpillars.

CATHETOPLATEUS. A term, with its opposite, Plagioplateus, frequently used by Artedi, and others who have adopted his system, in the description of fishes: they are expressed in English by the two familiar words, Compressed and Depressed. The heads of fishes are the principal parts characterized by these distinctions.

CATOCYSTUS. The name of one of the general divisions of the echinodermata, or sea hedge-hogs, which have the aperture of the anus in some part of the base; whereas the anocysti have it at the top of the shell.

For the more accurately distinguishing them into genera, the bases of the shells are to be divided into regular, and irregular. The regular are those which

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which are round, or oval; and the irregular, those which have sinuses or angles.

CATTLE. A collective term, importing all quadrupeds used either in tilling the ground or as food for the subsistence of mankind.

Under this term some naturalists include all quadrupeds of a gregarious nature, as sheep, oxen, horses, and hogs; while others define it to be all those tame animals which feed on grass.

CATTLE, BLACK. A term frequently used to express the cow kind; sometimes also denominated neat cattle.

CATTUPHUS, or COSSOPHUS. An Aristotelian name for the fish called merula and turdus nigricans by the Latins. It is a species of the labrus, easily distinguished from all others by its colour, and called the blueish-black labrus by such naturalists as acknowledge the generical name labrus.

CATULUS. A sea-fish, of which authors describe three species; viz. the major, the maximus, and the minimus. It is properly of the galeus kind; having a variegated skin; and a large wide mouth, furnished with strong teeth, sharp-edged, and hollowed inwardly. The first kind is common in the British seas, particularly on the coast of Cornwall; and the two others are generally found in the Mediterranean.

CATUS PARDUS. An American animal, called by some authors *Catus montanus*; and, in English, the mountain-cat. In the Linnæan system, it is a species of the cat called *felis pardalis*. See **CAT, MOUNTAIN**.

CATUS ZIBETHICUS. A name sometimes given to the animal which produces the perfume called civet.

CAVAGIRO. A Mediterranean fish shaped somewhat like the common eel, but thinner and more depressed.

CAVALLI-MARINI. A small animal, about the length of a man's thumb, found on the sea coast near Pozzuoli. The head bears some resemblance to that of a horse; and the body terminates in a tail like that of a shrimp. It is said to be efficacious in encreasing the milk of nurses.

CAUDISONA VIPERA. A name given by some naturalists to the rattle-snake.

CAUDIVERBA. An animal of the lizard kind, called also *wromastlyx*; but more commonly known among authors by the name of *cordylus*.

CAVIA COBAYA. A name given by the Brazilians, and several naturalists, to the creature commonly known among us by the appellation of the Guinea-pig.

CAURIS, or COWRIES. A genus of shells called by some conchologists *porcellana*, and *concha venerea*. From a false pronunciation of this word, these shells are sometimes called gowries. See **PORCELAIN SHELL**.

CAVY. A tribe of animals which have two cutting teeth in each jaw; four toes on the fore-feet, and three behind; short ears; and very short tails. They have a slow, creeping pace, are numerous breeders, and of course but short lived.

CAVY, COMMON. This animal is called in England the Guinea-pig, because it is supposed by the vulgar to come from that country; and, by Buffon, the Indian pig. Its ears are large, broad, and rounded at the sides; its upper-lip is half divided; and its hair is erect, somewhat resembling that of a young pig. It is of a white colour, or rather white varied with orange and black in irregular

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blotches. It has four toes on the fore-legs, and three on the hind; but it has no tail. It is a native of Brazil; but naturalists have furnished us with no account of its habits in a state of nature. It has been domesticated in Europe; and is a restless, grunting little animal, continually running from place to place, and from corner to corner. It feeds on bread, vegetables, and grains. It is extremely prolific, breeding almost every two months, and bringing forth from four to twelve at a time: but numbers of the young are destroyed by cats; others are killed by the males; and the cold of this climate proves fatal to many more.

The flesh of this animal is by some esteemed delicious; but it rarely composes any part of the viands of the inhabitants of this country.

CAVY, ROCK. This animal, which is about a foot long, has a divided upper lip; short ears; four toes on the fore-feet, and three on the hind; and, like the common Cavy, is destitute of a tail. The upper part of the body is of the colour of the common hare; and the belly is white.

The Rock Cavy is a native of Brazil, and takes up its residence in the holes of rocks. Its paces resemble those of a hare; it is hunted by little dogs; and its flesh is superior in flavour to that of our rabbits.

CAVY, PATAGONIAN. This species has long ears, much dilated near the bottom; the upper lip is divided; and on each side of the nose there are tufts of soft hairs, and long whiskers. The face, back, and fore-parts of the legs, are cinereous; the breast and sides are tawny; the belly is of a dirty white; the rump is black; the legs are very long; the claws are straight and black; and the tail is extremely short.

This animal, which grows to a considerable size, is found in great plenty near Port Desire, in Patagonia. It burrows in the earth like the rabbit; and its flesh, which is of a snowy whiteness, has an excellent flavour.

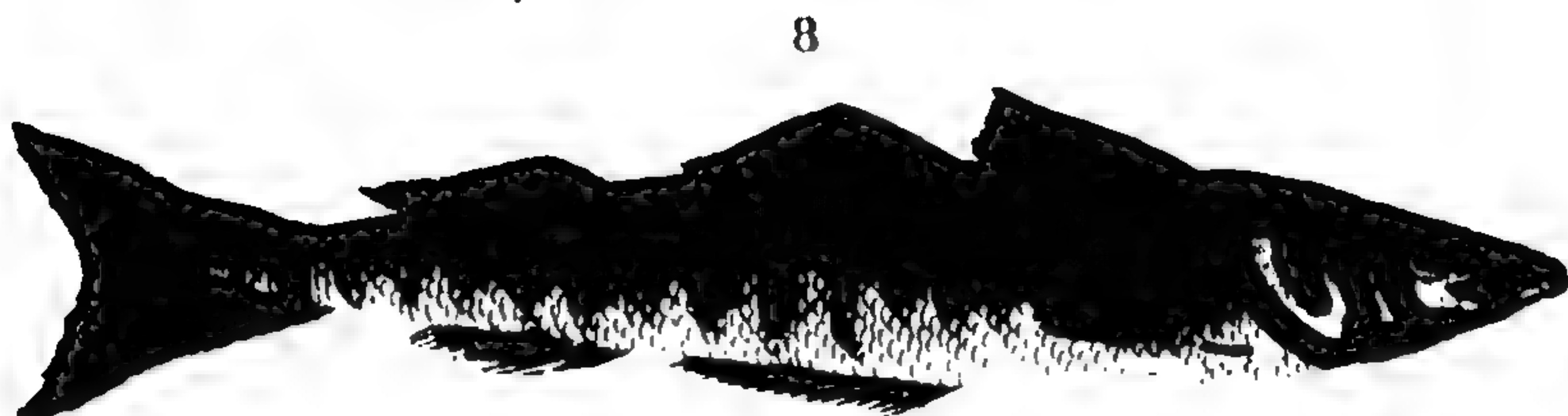
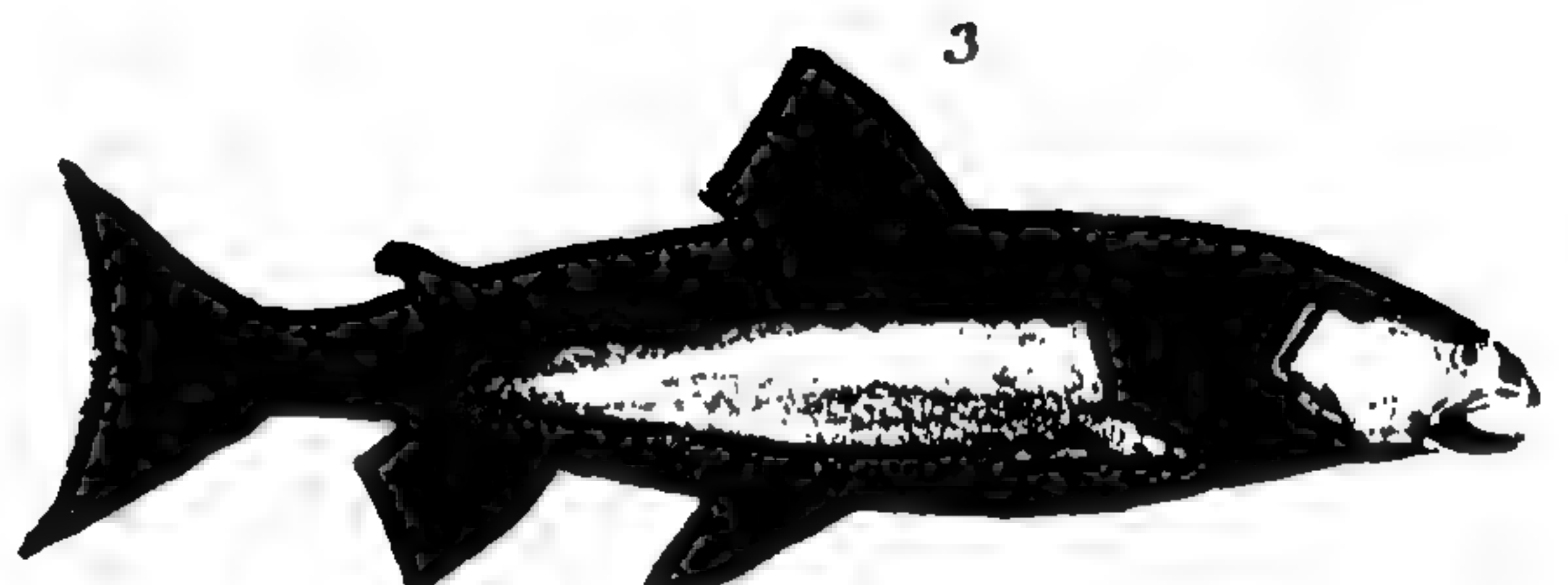
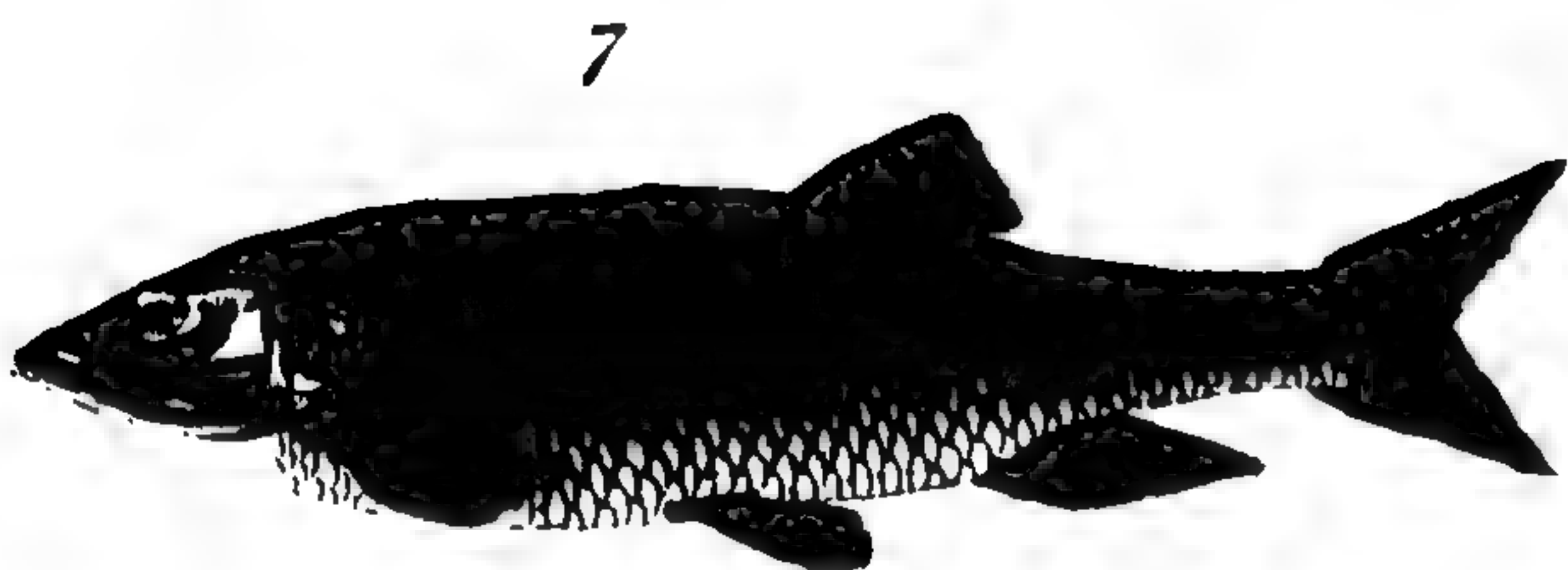
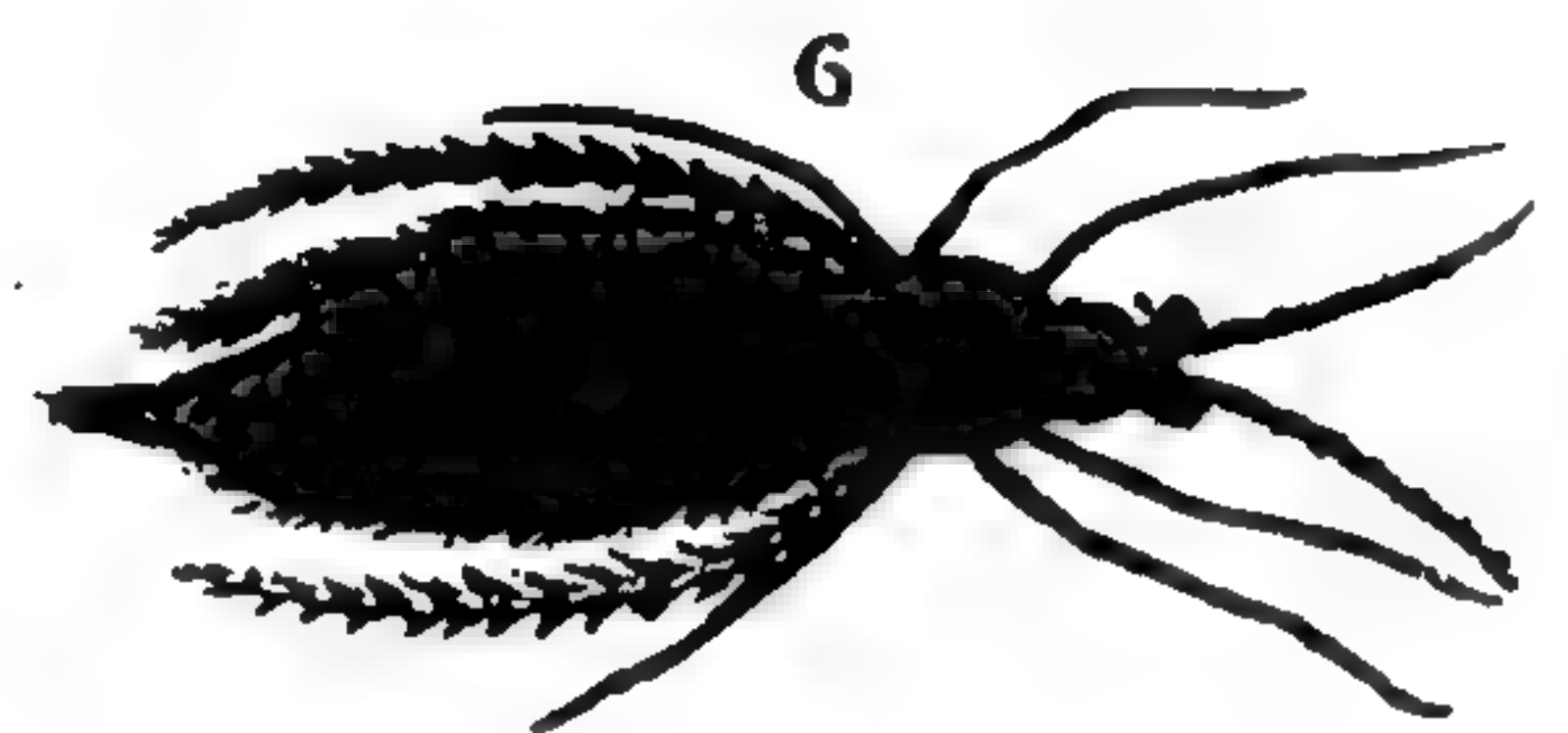
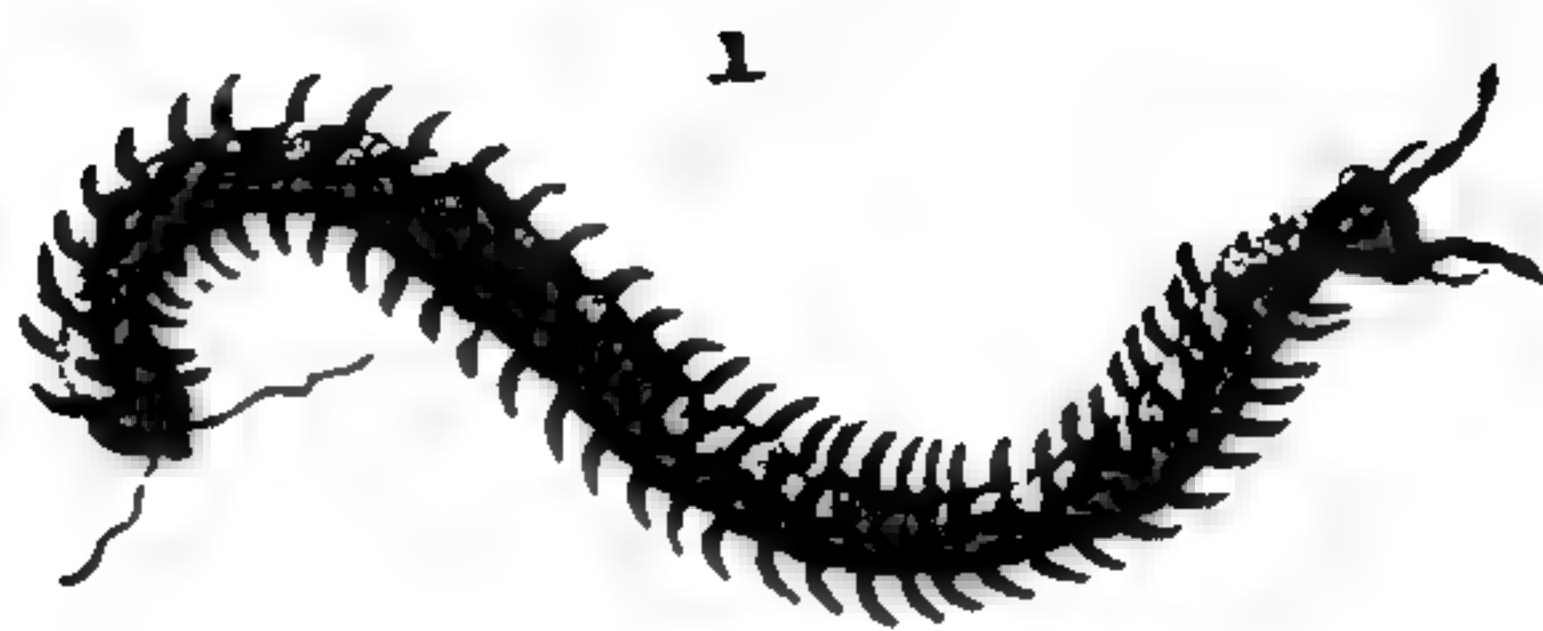
CAVY, SPOTTED. This animal, which is about ten inches long, is formed like a pig; and is by some authors called the hog-rabbit. It has five toes on each foot, and only the mere rudiments of a tail. The upper jaw is longer than the lower; the ears are short and naked; it has long whiskers; the upper part of the body is of a dark brown colour; the sides are marked lengthwise with lines of grey spots; and the belly is white.

This creature is found in Brazil and Guiana; and chiefly frequents fenny places, where it burrows under ground. It grunts like a pig, and bites severely. It grows very fat; and in Brazil it is esteemed a peculiar delicacy. According to Dampier, a variety of this species is found on the banks of the River St. Francis, entirely of a white colour.

CAVY, LONG-NOSED. This animal, which is about the size of a rabbit, has a long nose, a divided upper lip, short rounded ears, and black eyes. The hair is hard and shining, composed of a mixture of red, brown, and black; being of a bright orange colour on the rump, and yellow on the belly. It has black slender legs, four toes on the fore-feet, three on the hind, and a short naked tail.

This creature is also a native of Brazil and Guiana; and is a very voracious little animal. It grunts like a pig; and, resting on its hind-legs, holds its food with its fore feet when it eats, and conceals what it cannot devour. It runs very fast, its motions resembling those of a hare. When pursued, it usually takes shelter in a hollow-tree; and, when

irritated,



1. CENTIPEE. 2. CHAFFINCH. 3. CHARR. 4. CHATTERER OF CAROLINA.
5. STRAW-COLOURED CHINCH. 6. TAWNY CHINCH. 7. CHUB. 8. COAL-FISH.

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irritated, it's hair bristles on it's back, and it strikes the ground with it's feet. It's flesh is eaten by the inhabitants of South America, who esteem it very palatable; and the animal is capable of being domesticated, and rendered very tame.

There is also a less species than the preceding, of an orange-colour, which inhabits the same countries; and another found in Java and Sumatra, about the size of a hare, and of a reddish colour.

CAVY, CAPE. This animal, which is about ten inches long, has a thick head, full cheeks, and oval ears which are almost lost in the fur. The head is of the colour of that of the hare; the top of the back is dusky, mixed with grey; the sides and belly are of a whitish grey; and the shape of the body is thick and clumsy. There are four toes on the fore-feet, and three on the hind; and the tail is so short that it can scarcely be perceived.

This creature inhabits the mountains near the Cape of Good Hope, burrows under ground like a rabbit, and it's flesh is in high estimation among the inhabitants of that part of the world.

CAVY, MUSK. This animal is almost as large as a rabbit; the upper-part of it's body is black; and it's belly is entirely white. It inhabits Martinico, and the other Antilles islands; burrows under ground; and smells so strongly of musk, that it's retreat may be traced by the perfume.

CAVY, OLIVE. This small animal is very obscurely mentioned by naturalists; M. Barrere only informing us, that the colour is olive; and De Marchais, that it is esteemed delicate food. It is found in Guiana, and the islands of St. Lucia and Grenada; and lives in the woods on various kinds of fruits. It appears to have a great aversion to water; it is easily tamed; and, when it cries, which is but seldom, it makes a noise like that of the Guinea-pig.

CAY. A small Brazilian monkey of a deep black colour. It lives only in thick impervious woods; and usually sits on the branches of a particular kind of fruit-bearing tree, on the produce of which it subsists.

CAYMAN. A species of crocodile found in the southern parts of America, and on the coast of Guinea; more usually known among naturalists by it's Brazilian name Jacere.

Marcgrave asserts, that this animal has no tongue, but only a membrane lying even with the cavity of the lower-jaw, which however has the shape of a tongue, though it is incapable of elevation. This account agrees with what has been already advanced in the description of the alligator or crocodile, which in fact are the same animals. The eyes of the Cayman are large and round, of a bright grey colour, with black pupils; the fore legs are shorter and weaker than the hind ones, and there are five toes or fingers on each, three of which are armed with nails, but the two others have none. The hind legs have only four toes, the outermost of which has no nail.

La Condamine observes that, throughout the whole course of the river of the Amazons, Caymans or alligators are very common; that some of them measure twenty feet in length; that they lie whole days, and even nights, stretched out and motionless, inasmuch that those who are unacquainted with those animals might naturally enough mistake them for the trunks of trees covered with a rough grey bark, that during inundations they sometimes enter the cottages of the natives; and that there have been frequent instances of their even attempt-

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ing to drag a man out of a canoe in the sight of his companions, who have not been able to afford him any assistance.

CAYOPOLIN. An animal of the monkey kind, which bears a strong resemblance to the marmose, except that it's snout is more pointed, and it's tail longer in proportion. It is of an ash-colour inclining to yellow, and is a native of the new world.

CEHOILOTI. A Mexican bird of the pigeon kind, covered with dusky feathers, except on the breast and the extremity of the wings, where they are generally of a palish white; and the irides are red.

CEIXUPEIRA. An American fish, esteemed very fine and delicate food, though of an enormous size. It grows from nine to ten feet in length, and is as thick as a man's body; being of an oblong figure, with a flattened head. There are no teeth in the upper-jaw; but the mouth, which is small in proportion to the size of the creature, is thick-set with small tubercles. The back and sides are black; the belly is of a fine bright white; and the fins are all black, except the ventral ones, which are white, with a border of black at their edges.

CENCHRAMUS. A term by which some naturalists express the *emberiza alba*, called in England the bunting.

CENCHRIS. The name given by many authors to the keshel, or windhover, a species of hawk of the long-winged kind called the *tinnunculus*; and, in England, the stannel.

CENFONTLATOTI. An American bird described by Nieremberg, and called by that author *avis polyglotta*. It is celebrated for the agreeable modulations of it's voice; which, in point of melody, are said to surpass those of the nightingale.

CENOTZQUI. A bird mentioned by Nieremberg, called *avis evocatrix nivis*, because it is always very clamorous before a fall of snow. It is very beautifully variegated; and is equally capable of enduring a warm or a cold climate, but shews a predilection for mountainous countries. It turns it's head round in every direction without moving it's body, so as to be capable of observing every object that approaches it with the greatest facility.

There is another species of this bird, called by some authors *liceto*, and which differs from the former principally in the disposition of it's colours.

CENTEPEE, or CENTIPES. An insect so called from it's great number of feet; and, for the same reason, also termed *millepedes* by some, though improperly, because that appellation is always bestowed by naturalists on hog-lice. It is very common in many parts of the world, especially between the tropics; and in the West Indies there are several species, the bite of one of which frequently proves mortal.

This creature is somewhat longer than a human finger, and as thick as a goose-quill, but more flat, and of the colour of rusty iron. It has a round head, with two small but very sharp teeth; and the whole body is divided into ten or twelve joints, and as many transverse black lines, at the bottom of each of which there are two pretty long feet. There are two small horns on the head, and the tail is forked. It is found principally among rotten wood. When touched, it is sure to bite; the wound inflicted produces the same effects as the sting of the scorpion; and the like remedies are applied in order to a cure.

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CENTEPEE OF THE EAST INDIES. This species is about five or six inches long, of the thickness of a finger, and of a ruddy colour. It consists of many joints and bones; and has two claws or pincers, with which it wounds as dangerously as the scorpion, and excites the most excruciating pain. It lurks in holes, and among old furniture; and is seldom seen abroad except when molested.

CENTEPEE OF THE CAPE OF GOOD HOPE. This creature is about three inches long, and half as thick as a finger. It is covered with hair, and appears to have no eyes; but there are two feelers on the head, which serve to direct it's motions. It is highly venomous, it's bite being equally as dangerous as that of the scorpion. An European mariner was bit by one of these insects in such a terrible manner that his life was supposed to be in danger; but, by the application of roasted onions to the part affected, he soon recovered.

CENTEPEE, AFRICAN. This species is four inches and a half long, and as thick as a swan's quill. The colour of the whole body is of a shining brownish black; and to each division or incisure belongs a spot of a yellowish colour, sixty of which are arranged on each side. It is asserted by some authors, that though this insect be severed into two parts, both will continue in a state of animation. When irritated, it bites so very fiercely, as to wound the hand even through a thick glove. It has a forked mouth; and two feelers, for the purpose of warning it of approaching danger, as well as assisting it in procuring it's necessary aliment.

CENTEPEE, AMERICAN. This insect has a flame-coloured line running down it's back; and it's sides resemble brass. It has a vast number of feet, as small as hairs; an exceedingly small head; and, from it's moving with equal facility either backwards or forwards, it has been supposed to have two heads.

A variety of this kind, brought from Cape Augusta, was somewhat larger than the former; and had seventy livid divisions or incisures, and twice as many feet.

CENTEPEE, COMMON. This species is found in Great Britain. It is about an inch long; it's body is flat, thin, and of a brownish colour; and it's legs are short and yellowish.

CENTEPEE WITH THIRTY LEGS. This animal is not more than half an inch long, nor thicker than a wheat-straw. It is flat, and of a red colour; and it's last pair of legs, which are very long, give it the appearance of having a forked tail.

Linnaeus mentions only three sorts of Centepees; that with seventy feet on each side, that with twenty, and that with fifteen.

CENTRINE. A name given by some naturalists to the porcus piscis. It is properly of the galeus kind, but much thicker and shorter than any of that genus; and, from the head to the tail, is somewhat of a triangular figure; it's broad and flat belly forming one side of a triangle; and it's two sides, which unite at the back, the other two. This animal derives the name porcus piscis either from the shape of it's back, which, rising into a ridge, resembles that of a hog; or from it's being fond of wallowing in mud, after the manner of swine.

CENTRINES. A species of insects hatched in wild fig trees.

CENTRISCUS. A genus of the order of nanctes in the class of amphibia; the characters of which are, that the head is protracted into a very narrow

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beak; that the aperture is recurved; that the abdomen is carinated; and that the belly-fins are united.

CENTRONIA. A name by which modern naturalists have distinguished the echini marini. Dr. Hill makes them a distinct series of animals, living under the defence of shelly coverings, each formed of one piece; and furnished with a vast number of spines, all moveable at the creatures pleasure.

The species of Centronia, though very numerous, may all be comprehended under the following general divisions: the roundish or subglobose kind, called by Klein cidaris; the cordated kind, called by that author spatangi and spatagoides; and the flat kind, called by him placentæ.

The above celebrated naturalist, who has shewn a considerable share of ingenuity in the arrangement, has divided these animals into a number of other genera; but they may be all ranked under one or other of the aforesaid divisions. Besides the known recent species, many are found in a fossil state of a very singular figure.

CEOAN. A bird common in the Spanish West Indies, and described by Nieremberg, who calls it avis nivea. It is somewhat larger than the European thrush; and is very remarkable for the facility with which it learns to imitate the human voice.

CEPHALUS. An Aristotelian name, applicable to the mugil or mullet; called by other authors capito.

Cephalus is also a name given by some naturalists to the fargus, called also gardo, and gardon; a fish scarcely distinguishable from the roach.

CEPHUS. The ancient name of a species of monkey known among moderns by that of mona. It is distinguished by it's colour, which is variegated with black and red; and it's tail is of an ash-colour, with two white spots on each side at it's insertion. It is a native of the northern parts of Africa.

The term Cephus is also applied to a bird described by Aldrovandus as resembling the gull in it's bill, feet, and legs; but, in other respects, approaching nearer to the duck kind. It is about thirteen inches and a half long from the tip of the bill to the extremity of the tail; and is covered with such an abundance of feathers, that it appears larger than it really is. The bill is of a moderate size, of a flesh-colour, ruddy on the sides, and black at the extremity. The irides are whitish; and the head, as well as the under-parts, are covered with white, brown, and yellow spots. The wings are black, with some yellow feathers at their tips; the greater tail-feathers are also blackish; the legs and toes are of a green hue; but the feet and membranes between the toes are brown.

CEPOLA. A genus of the thoracici, in the class of fishes; the characters of which are, that the head is roundish and compressed; that the mouth is flat; that the teeth are crooked; that the branchioslegious membrane consists of five bony plates; that the body is uniform and not spotted; that the abdomen is scarcely as long as the head.

CEPULA. A name given by Gesner, and some other naturalists, to the common turbot. The term is derived from the Italian *capo*, the head; the name of the fish in the markets of Rome. It is a species of the cepola.

CEPUS. An appellation given by some naturalists to those smaller kinds of monkeys which take a mixture of green in their other colours.

CLERANUS.

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CERAMBYX. The classical name for a kind of beetle.

CERASTES. A species of serpent called in England the horned snake, having two protuberances on it's forehead like shells, but of a more solid texture: these horns are frequently not larger than barley-corns. The teeth are like those of the viper, and placed in the same order. This animal, which partakes of the nature of viviparous serpents, is remarkable for it's almost total abstinence from water. It is found in Lybia; and also in Arabia, particularly near the town of Suez.

Cerastes is also a name given by the ancient Greeks to a stag arrived at it's full growth, or at the end of it's fourth year.

CERCOPITHECUS. A species of long-tailed monkeys. Aldrovandus, Marcgrave, and other authors, have given the figure and history of many of the Cercopithecii; and the former mentions some as large as mastiff-dogs, having tails five cubits long. In Brazil there is a yellowish species, which smells of musk.

These monkeys, when in danger of falling from trees, save themselves not only by their feet, but also by their tails, which they wrap round the boughs. The nation of the Zygantes, in Africa, esteem their flesh proper for food.

CEREBRUM JOVIS. A name given by the ancient poet Ennius to a peculiar fish of the labrus kind, called scarus by the generality of authors. It is distinguished by Artedi from the other species of the same genus by the name of the labrus, the scarus of naturalists.

CERIGO. An appellation given by many authors to that singular American animal called the opossum. The Americans, in some parts of the continent, call this creature carigüeya; and it is probable that the name Cerigo is only a corruption of that word, though it is generally received as a proper name, and used as such by Maffei, Barlaeus, and Nieremberg.

CERNUA. A small fresh-water fish, called by authors the aurata, aspredo, and perca minor; and, in English, the ruffe. It is nearly of the shape and figure of the common perch; but, when arrived at it's full growth, seldom exceeds six inches: it differs also from that fish in being destitute of those black transverse lines with which the back and sides of the common perch are variegated. It is caught in many of our rivers, particularly in the Yare, at Norwich.

CERRUS. An appellation given by Pliny, and other ancient writers, to the fish called by the generality of naturalists finnis, and mæna candida. It is of the sparus kind, according to the Artedian system; and distinguished from the other fishes of that genus by it's having a black spot in the middle of each side, and in the pectoral fins and tail long red.

CERVUS VOLANS. The classical name for the flag-fly, or flag-horned beetle; a very large species of icharabæus, with sloping horns, somewhat like those of the flag. It is of a blackish colour, but the horns have sometimes a purplish cast, and in some few they have been found of the colour of red coral. This insect, when at it's full growth, is an inch and a half long.

The flag beetle is commonly seen in Essex, and several other counties of England. But, besides this species, there is another produced from a hexapod worm, of a deeper black than the former, and horns of which tend forth only one branch.

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CERYX. A name by which Pliny, and other ancient writers, have denominated the three genera of shell-fish since distinguished under the names of buccinum, purpura, and murex.

CESTREUS. A fish of the mullet kind, but whose head is much smaller and narrower; and the sides are variegated with shorter longitudinal lines. It is caught in most places; but it's flesh is esteemed greatly inferior to that of the mullet.

CETACEOUS FISHES. A term generally denoting all such large sea-fishes and beasts as resemble the whale. However, in a proper sense, the word Cetaceous denotes only those large fish which are viviparous, or bring forth their young alive; that have no gills, but respire through lungs like quadrupeds; which have but one pair of fins; and that suckle their young.

These animals scarcely differ from quadrupeds, except in the circumstance of their having no feet. They have no air-bladders; but are enabled, by means of the air received into their lungs in respiration, to render their bodies equiponderant to water.

In the ordinary acceptation of the term, Cetaceous is applied to all fish of the larger kinds, called by the Latins belluæ marinæ, or sea-beasts. In this respect, Cetaceous Fishes are divided into greater, including the whale kind properly so called; and lesser, to which belong the porpoise, shark, dog-fish, and many others; but these last are more properly termed cartilaginous fishes.

CETUS. See WHALE.

CHÆRUS. A name given by Strabo, and some other ancient authors, to the fish called caprificus by the moderns. See GOAT-FISH.

CHÆTIA. A species of insects of the apteria kind, without any visible limbs. The Chætia resembles a hair, or rather a piece of fine thread; it's surface is smooth; and it's body rounded, and very slender. In England it is called the hair-worm.

CHÆTODON. A genus of the acanthopterygious or thoracic fishes; the characters of which are the following: the branchiostegious membrane on each side contains five or six small bones; the body is compressed, thin, and short; the back has but one fin, which reaches it's whole length; the tail is large, and, exclusive of it, there are six other fins; the mouth is small, and the lips may be opened and extended, though, naturally, they cover a part of the teeth; the teeth in the jaws are oblong, contiguous to each other, and flexible; the scales are rough; and the eyes are not covered with the skin of the head.

CHÆFFER. A sort of beetle.

CHÆFFINCH. A species of the fringilla, a well known bird, which begins it's song early in the spring, but, towards the close of summer, assumes a chirping note. It may be properly termed a native of Great Britain, as both sexes continue in this country during the whole year; but, what is very remarkable, the females migrate in flocks from Sweden to Holland in the month of September; and in the spring return to their mates.

This bird builds it's nest almost of the same materials as the goldfinch, except that the inside has the addition of some large feathers, and lays four or five eggs, of a dull white colour, tinged with deep purple. The feathers on the forehead are black; the bill is of a pale blue, with a black tip; the crown of the head, as well as the hind part and sides of the neck, are of a blueish grey, the space above

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above the eyes, the cheeks, the throat, and the fore-part of the neck, are red; the sides and belly are white, tinged with red; the upper part of the back is of a deep tawny colour; and the lower part, together with the rump, are green. The coverts on the ridge of the wing are black and grey; the bastard-wing and the first greater coverts are black; and the rest are tipped with white. The quill-feathers are black; their exterior sides are edged with pale yellow; and their inner and outer webs are white on the lower part. The tail is black, except the exterior feather, which is marked obliquely with a white line from top to bottom; and the legs are dusky.

The colours of the female are very dull, and she is entirely destitute of the beautiful red which is found on the breast of the male. The head, and the upper part of the body, are of a dirty green; the belly and breast are of a dirty white; but the wings and tail are marked like those of the male.

As Chaffinches are naturally very hardy, they may be taken from their nests when about ten days old, and brought up with facility; and, during the months of June and July, the young flight may be easily caught in nets near the watering places they frequent. Some bird-fanciers cruelly deprive these inoffensive animals of their sight, by thrusting red-hot wires into their eyes; but this barbarous practice, whatever purpose it may answer, is surely disgraceful to humanity.

CHALCHUS. A Grecian name for the fish usually called the doree. It seems to have obtained both names from its colour; the one from the word Chalchos, Brass; and the other from Doreé, Gilded.

CHALCIDICA. A species of serpent so called from the resemblance of its colour to the chalcidony. Its bite is succeeded by a pellucid tumour, with a shining blackness at the margin. According to Paulus Aegineta, it cures its own venom, drank in wine. It is sometimes called seps.

CHALCIS. A name given by some authors to the pilchard; and called by others celerinus and apua membras.

CHALCOMULA. A species of fly whose wings have the effulgence of polished brass. It is an insect of the carnivorous kind, and feeds on other flies, beetles, and even dead serpents: whence it has been also called by some ophioborus; and, by others, helycius.

CHAMA. A genus of large bivalve shells; the characters of which are these: they are commonly smooth, though in some places a little rugose; and, in a few species, there are numerous spines. The valves of the shell are equal, elate, and convex; and the mouth gapes, as in the oyster.

The inclosed animals have all of them a hot pungent taste, and inflame the mouth to a very great degree. From this circumstance the French have given them the name of flames and flammets; and, in some provinces of their country, they are called lavignons and pelourdes.

The ancients engraved a diversity of figures on the various species of this shell; and, conformably to their fancy, they could give the distinct parts of the imprinted figure the colours of the several coats of the shell by the depth of the incision: thus they could impart to human flesh its natural white; and to the dress a blue or yellow tinge, according to the nature of the species of Chama on which the work was performed. Several of these antique works are still extant; and probably this was the first invention of that sort of engraved gem called camea.

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CHAMELEIA. An appellation given by some naturalists to a peculiar species of chama; but generally applicable to such of them as have smooth surfaces, of which there are a great number.

CHAMOIS. An animal of the goat kind, known among naturalists by the name of rupicapra. It has slender, black, upright horns, hooked at their extremities, and behind each there is a large orifice in the skin, supposed by some for the purpose of respiration; but there is not the smallest foundation for this opinion, as it is well known that there is no perforation through the skull, nor are there any ducts discoverable from these orifices. The forehead is brown; the cheeks, chin, and throat, are white; the belly is yellowish; and the rest of the body is of a deep brown colour. The hair is long; the tail is short; and the hoofs are much divided like those of the rest of the goat kind.

This animal inhabits the Alps of Dauphiné, Switzerland, and Italy; the Pyrenean mountains; the mountains of Caucasus and Taurus; and the countries of Greece and Crete. It generally feeds before the sun rises, and after it sets; and during the winter conceals itself in the clefts of rocks, in order to avoid the falls of the Avelanches. At that season it subsists either on the tender twigs of trees, or on the roots of plants or herbs, for which it digs under the snow. These creatures are equally timid and vigilant: each herd has its leader, which stands as centinel on some eminence while the rest are collecting their food; and, on the first discovery of an enemy, it alarms the whole troop by a kind of hiss, who instantly seek protection in flight.

These animals have very piercing eyes, and their senses of hearing and smelling are exceedingly quick and strong. They are also excessively swift and active; and the pursuit of them is a very laborious employment, as they can only be overcome by surprise. They are hunted principally for their skins; and their flesh is by no means despicable food. In their stomachs there is often found a hairy ball, covered with a hard crust of an oblong form. They live to a great age; and bring forth two, and sometimes three, at a time.

CH'ANCERONS. The French name of a small caterpillar which destroys an immense quantity of corn in their granaries. The butterfly which produces this noxious insect has white wings marked with black spots. The caterpillar, when first hatched, is one of the smallest with which naturalists are acquainted. It spins a vast number of fine threads as soon as emancipated from the egg, by which it attaches itself to whatever objects are most contiguous. Towards the end of summer, these caterpillars quit the corn, and mount up the walls of the granaries, in order to search for proper retreats; which when they have found, they enter, cover their whole bodies with webs of silk of their own spinning, and in due time assume their aurelia form. In this state they remain the whole winter, seemingly without either life or motion; but, in the months of April and May, the butterflies are hatched from them; and the males and females then coupling together, the latter immediately lay their eggs, and thus give rise to a new progeny, which, during the summer season, consume the corn under the form of caterpillars. The female protrudes a kind of tube from her tail, by means of which she forces her way into the grain, and lodges her egg, which in the space of fifteen or sixteen days is hatched into a caterpillar; and no sooner does it assume this form, than it begins to devour the corn with the

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utmost avidity, and soon marks it's situation by the quantity of husks which it strews all around it.

CHANE. An Aristotelian appellation for the fish called by other authors *hiatula*, *chauna*, and *chaunus*. It is a genuine species of the *labrus*; and is distinguished by Artedi under the name of the fork-tailed *labrus* with the lower jaw longer than the upper, and with black transverse lateral lines.

CHANNA. A Mediterranean fish very like the sea-perches, among which it is frequently exposed to sale in the Italian markets.

It is said that, among all fish of this kind which have been examined by naturalists ever since Aristotle's time, none but females have been found. Whether this assertion be true or false, it is perhaps very difficult to determine; and, should it be proved in the affirmative, the only conclusion which could be drawn from it is this, that the *Channa* is no distinct species, but only the female of some other fish.

CHANNADELLA. A name given by Bellonius, and some other authors, to a species of the *labrus*, called also *sachettus*, and *hepatus piscis*.

CHAR. This fish inhabits the lakes of the north, as well as those of the most mountainous parts of Europe. It shews a strong predilection for clear and pure waters; and is seldom known to wander into running streams, except their bottoms are similar to those of it's native lakes. It is found in great abundance in the cold bodies of water on the summits of the Lapland Alps; and is almost the only fish which is met with in any plenty in those inhospitable regions. There are but few lakes in Great Britain which produce this curious fish; and, even where the breed is preserved, it never becomes numerous. It is found in Winander Mere, in Westmorland; in Llyn Quellyn, near the foot of Snowdon, in Wales; and in Loch Inch, and other neighbouring lakes, in Scotland; but whether it is found in Ireland or not, we are not competent to determine. Mention has been made by naturalists of the case Char, the red Char, the silver or gilt Char, and the gelt Char; but, on a close examination of each variety, it has been impossible to discover any specific difference sufficient to constitute so many distinct species.

The body of the Char is longer and more slender than that of the trout; the back is of an olive colour, speckled with whitish spots; the belly is generally red, especially in the females; the scales are very small; and the lateral lines are straight. The mouth is wide; the jaws are nearly equal; the lower parts of the fins are of a vermilion dye; and the gills are quadruple. The Char is furnished with teeth both in the jaws and on the tongue, and in the upper-jaw it has a double row. This fish is very scarce, and it's flesh is soft and tender; on both which accounts it is in high estimation.

CHAR, GELT, OR BARREN CHAR. This species differs principally from the former in not having spawned the preceding season. It is more slender than the red Char; the back is of a glossy hue; the sides are silvery, mixed with blue; the belly is spotted with pale red; the sides of the belly are of a pale red; and the middle is white. This variety is found only in those lakes which are inhabited by the red Char.

CHARADRIUS. The name by which Gesner and Aldrovandus have called the *œdicnemus*, a bird known in England by the title of the stone curlew. The term *Charadrius* is also applicable, in the Linnæan system of zoology, to a distinct genus

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of birds of the order of *grallæ*: the distinguishing characters of which are; that the feet have each three toes, that the point of the bill is cylindrical and obtuse, and that the nostrils are linear. There are twelve species of this genus.

CHARAX. An appellation given by several Greek writers to the fish called *carassius* by the moderns. It is properly a species of *cyprinus*, and usually distinguished by the name of the *cyprinus* with twenty rays in the back fin and the lateral line straight.

CHARMA. A sea-fish which agrees in many particulars of it's conformation with the sea-wolf. The lower jaw is longer than the upper, and gives the mouth the appearance of being always open. The teeth are sharp; the eyes are small; and the back is of a blackish red. The lines which run from the head to the tail are reddish; and the tail is sprinkled with red spots, as well as the fin behind the vent, which runs to the tail.

CHAT-PARD. An animal of the leopard kind; which, when dissected by the French academicians, disclosed to view a defect in the spermatic vessels, and other parts absolutely necessary to generation; nor did this imperfection appear to be either the effect of castration or of accident. See *PARDUS*.

CHATTERER. A genus of birds of which only two species have as yet been described by naturalists.

CHATTERER OF BOHEMIA. This bird sometimes visits England; and about the month of February it is annually seen in Scotland, in the vicinity of Edinburgh, feeding on the berries of the mountain-ash; and also as far south as Northumberland, where it subsists on the berries of the white-thorn. But the native country of the Chatterers is Bohemia, from whence they wander over Europe; and were formerly regarded by the superstitious of some countries as the certain presages of a pestilence. These birds are gregarious; they feed on grapes in those places where vines are cultivated; their flesh is esteemed as highly delicious; and they are easily tamed.

The length of the Bohemian Chatterer is about eight inches; the bill is short, thick, and black; the base is covered with black bristles; and from thence a black bar passes to the hind-part of the head over each eye. The head is adorned with a sharp-pointed crest, which reclines backwards; the irides are of a bright ruby colour; the cheeks are tawny; and the throat, which is black, has a small bristly tuft in the middle. The head, crest, and back, are ash-coloured mixed with red; the breast and belly are a pale chestnut dashed with a vinous cast; the vent-feathers are a bright bay; the lower part of the tail is black, the end being of a rich yellow; and the feet are also black. The lesser coverts of the wings are brown, and the greater are black tipped with white. The quill-feathers are black, the three first being tipped with white; and the six succeeding ones have half an inch of their exterior margin edged with a vivid yellow, and their interior with white. The horny appendages proceeding from the tips of seven of the secondary feathers, which have the colour and gloss of the finest red sealing-wax, distinguish this bird from all others; and the mark of distinction between the male and the female is, that the latter wants the yellow margins to the wings.

CHATTERER OF CAROLINA. This bird is scarcely seven inches long from the tip of the bill

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to the extremity of the tail. The bill is short, a little arched on the top of the upper mandible, and of a blackish colour; and round it's base there are small black feathers which form a bar reaching beyond the eyes. This bar is bordered with white both above and below the eyes; and on the top of the head there are several long feathers composing a crest, which the bird is capable of erecting or depressing at pleasure. The head and neck are of a reddish-brown colour; the breast is whitish; the belly and thighs are of a pale yellow; the covert-feathers beneath the tail are of a light colour; and the back is of a dark brown. The rump, as well as the covert-feathers on the upper-side of the tail, are of a light ash-colour; the wings on the upper-side are cinereous; but the greater quill-feathers are of a darker hue than the rest, though the margins of the exterior webs are of a light ash-colour. The inner webs of the three interior quills on each wing next the back are white to the tips; and seven or eight of the middle quills of each wing have small oblong unctuous substances depending from them, not unlike red sealing-wax both in colour and consistence. The tail is of a dark ash-colour, the tips of the feathers being of a fine golden yellow; and the legs, feet, and claws, are black, and of the usual conformation.

The hens of this species are less vivid in their colours than the cocks, and are destitute of the red appendages at the tips of their wing-feathers.

CHAYQUARONA. The Portuguese name for a fish of the turdus kind, caught on the Brazilian shores; more frequently called by it's native appellation, *piraumbu*.

CHEGOE. An American insect, called *chique* by the French, and *negas* by the Spaniards. It is very small, of a black colour, and generally found among ashes and other filth. It penetrates through the stockings with facility, and generally lodges itself under the toe-nail, and the more prominent parts of the skin. At first it produces a pain somewhat similar to the bite of a flea, and afterwards eats the flesh so gently as only to occasion a slight itching; but by degrees this creature grows bigger, till at length it becomes of the size of a large pea, when it produces nits which lodge round the parent insect; and, if proper care be not taken, they increase so prodigiously, that a putrefaction of the surrounding flesh ensues, which produces malignant ulcers, and sometimes gangrenes.

These insects not only infest the human species, but also monkeys, cats, and dogs. The most effectual way to prevent their attacks, is to wear thick stockings; and to bathe the feet often, particularly in sea-water.

CHELIDON. An appellation given by many of the ancient Greeks to a kind of flying-fish, called by some authors *milvus* and *hirundo*; and, by others, *accipiter*, or the hawk-fish. It is properly a species of the *trigla*; and is distinguished by Artedi under the name of the *trigla* with the head a little aculeated, and a singular member near the pectoral fins. This method of reducing fish to their true genera, and distinguishing them by their proper specific names, seems to be the most effectual way of acquiring a perfect knowledge of them. The arbitrary names of *milvus* and *hirundo* convey so imperfect an idea of the particular fish, that they might be as well applied to one species as another; and accordingly we find two or three different sorts of the *trigla* denoted by the inconclusive name of *milvus*.

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CHELIDONIUS. The name of a certain fly, which some authors call the swallow-fly on account of it's velocity in flight. It is generally of a brown colour, with black prominent shoulders, a black head, and short black antennæ. The wings are silvery, and edged with black. It often continues for a considerable time on the leaves of plants; but, being very quick-sighted, it avoids every hostile approach; and, from the length of it's flights, is not easily caught.

CHELON. A fish of the mullet kind, which strongly resembles the common mullet in it's general shape, but it's eyes are more prominent, and it's head is smaller. It has also two side-lines running from the head to the tail, very evenly ranged, and placed at equal distances; and it's lips are remarkably thick and prominent.

CHERMES. A genus of four-winged insects, the characters of which are, that the rostrum or beak is situated under the breast; that the abdomen is mucronated or pointed at the hinder extremity; and that the legs are formed for leaping.

These insects, which are in English called bugs, derive their particular distinctions from the plants or trees on which they feed. Linnæus enumerates eight sorts; namely, that of the elm, the maple, the beech, the elder, the fir, the willow, the ash, and the nettle. Besides these, he mentions another species, which is supposed to breed in the head of the cerastes, or horned serpent.

CHERSYDRUS. An amphibious serpent, so called from it's living at first in watery places, whence it receives the name of *hydrus*; after which it shifts it's habitation, and remains on dry ground, and from thence it derives it's compound appellation of *Chersydrus*.

CHEVALIER. A bird called by some English naturalists the horseman, of which there are several species. It is about the size of a pigeon, and extremely well feathered. The bill is long, reddish near the point, and black near the base; and the head and legs are wholly black. The neck, back, and breast, are white; but the remainder of the upper-part is black. The wings are blackish, and have a white transverse line on each side. It is called the Chevalier, or horseman, because it stands high on it's legs; and some fanciful authors have supposed that this circumstance gives it the appearance of being mounted on horseback. It frequents lakes, meadows, and the margins of rivers, and wades into the water as high as the thighs. It's flesh is very delicate, and well flavoured. In some countries this bird is called *crex*, on account of it's voice, which seems to express that syllable; but it is never seen in England.

CHEVALIER, RED, OF BELLONIUS. The feet of this species are of a yellowish-red colour; the bill is short; the head and neck are of a dark ash-colour; and over the eyes there is a white line. The feathers under the wings are cinereous; and on each side of the temples there are two black spots.

CHEVALIER, RED-LEGGED. This bird is sometimes seen in this country, but not very frequently. It derives it's name from the colour of it's legs, which are of a bright red. The top of the head and the neck are of a fine light brown; the bill is slender, near two inches long, of a reddish colour at the base, and black at the extremity. The covert-feathers in the middle of the wings are black, but within two inches of the end of the tail they are brown, edged with white. This species measures near eighteen inches from the point of the bill

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to the end of the claws; and the breadth, when the wings are extended, is two feet.

CHEVIN. A name used in some parts of England for the capito, or chub.

CHEVROTIN. A beautiful animal, sometimes called the Guinea-deer, the least of all cloven-footed quadrupeds, and perhaps the most elegant. Its legs, at their smallest parts, are not much thicker than the shank of a tobacco-pipe. It is about seven inches high, and about twelve from the point of the nose to the insertion of the tail; and of a most delicate shape, being compleatly formed like a stag in miniature, except that its horns, when it has any, are more of the garelle or antelope kind, being hollow and annulated after the same manner. It has two canine teeth in the upper-jaw; in which respect it differs from all other animals of the goat and deer kind, and thus makes a distinct genus of itself. The colour of this singular animal is no less pleasing than its conformation; the hair, which is short and glossy, being in some of a beautiful yellow, except on the neck and belly, where it is white.

These animals are natives of India, Guinea, and the warm climates between the tropics. They are amazingly swift; nevertheless, the negroes often overtake them, and knock them down with their sticks. They are easily tamed, and soon become very familiar and agreeable; but such is the delicacy of their constitutions, that they cannot exist except in the hottest climates. The males of the Guinea sort are furnished with horns; but the females are destitute of them, as well as all the varieties to be found either in Java or Ceylon, where they chiefly abound.

CHICKEN. The young of the gallinaceous order of birds, and especially of the common hen.

CHICUATLI. The Indian name of a bird described by Nieremberg, and by him called noctua canora. Its beak is long, black, and slender; and its head is marked with undulated streaks of yellow near the eyes. The breast and belly are whitish; it has some black feathers intermixed with white on the throat; and the back is variegated with black, yellow, and grey.

It principally frequents mountains, where it runs on the ground, unless alarmed by some approaching danger. It is easily bred, and almost every kind of food agrees with it. In the hotter climates this bird is very plentiful; and its flesh is generally fat and nutritive.

CHIEPA. A name given by some authors to the fish more generally called alautia, and known in England by the appellation of the shad, or the mother of herrings.

CHIMPANZEE. An Angolan animal of the ape kind, a variety of the ourang-outang, or great ape, very nearly approaching to the human figure, but of a fierce and malicious disposition. About forty years since, one of these creatures was imported into England by the captain of a ship in the Guinea trade. It was of the female sex, and about two feet four inches high; it naturally walked erect, was hairy on some parts of its body and limbs, and very strong and muscular. It was satisfied with the coarsest food; but shewed a peculiar fondness for tea, which it drank out of a cup and saucer in the usual manner. It slept like the human species; and uttered some inarticulate sounds, in imitation of the human voice.

The male of this species is very bold, and will venture to attack an armed man. It is said that

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they often seize on the negro women in the woods, and force them into their horrid embraces. The creature which was exhibited in England was only twenty months old, and very tame. The parent held it in her arms in its native country, and did not resign it till she was killed with a spear by one of the natives, when she was found to measure five feet in height. A male of this kind has been described by Dr. Tyson. See APE, GREAT.

CHINCH. A genus of insects described by Dr. Hill as furnished with four feathery wings. The antlers are composed of a few oval joints, the extreme one running out into a point; the tail is split, and setous; and the feathers, which are placed as wings, consist of jointed ribs, thin flat plates being regularly placed over them. These animals are so extremely small, that they have in a great measure escaped observation. Few of those naturalists who have studied these minute insects, have been able to trace many of them; and, from such as have, very little of their nature is to be learned, as the lucernal microscope is absolutely necessary to assist the naturalist's researches, and this invention is but of modern date. Those creatures in the insect world to which the Chinchies approach the nearest, are the feather-wing moths; but from these they differ abundantly in the structure of their antlers, the shape of their bodies, their motions, and the peculiar formation of their tails. The substance which composes the wings of the Chinchies, though in appearance they very much resemble the plumes of birds, are in reality very different; for they have nothing feathery in them, but are solely composed of hollow jointed ribs, not unlike some of the corallines; and the seeming hairs, or plumes, which cover them, are flat, thin, conic scales.

CHINCH, STRAW-COLOURED. Each wing of this species is composed of one distinct, undivided feather; the head is of a lemon-colour; the eyes are of a delicate blue; the antlers are of a very pale brown, but ruddy at the base of each joint; and the feelers are pale, and small. The trunk is of a light straw-colour; the scutcheon is somewhat greenish; the body is of a pale straw-colour, and the lines which intersect it are whitish. The legs are a pale brown, but of a deeper cast at the joints; the wings are whitish, with a shade of brown; and the tail is amber-coloured.

Dr. Hill, to whom we are indebted for the description of the Straw-Coloured Chinch, informs us, that this creature fell under his cognizance in the following very singular manner. A gentleman very subject to the head-ache, (which complaint his physician attributed to his studious disposition) sneezing one day with great violence as he was writing, observed some atoms presently afterwards on a sheet of white paper which lay before him; and, as they plainly moved, he folded them up, and brought them to the doctor; who having laid a few of these animalcules before the lucernal microscope, found them to be Straw-Coloured Chinchies, usually inhabiting the flowers of the plant mignonette, which, on enquiry, he found the gentleman kept in his chamber.

CHINCH, TAWNY. The characters of the genus are in no species more distinctly seen than in this. Each wing is composed of two feathers, rising from a simple base; the head is of a dull yellowish brown; the eyes are large, and of a fiery red; the antlers are firm, a little hairy, very sharp at the points, and of a pale-brown colour. The feelers are short and dusky; the trunk is brown, covered

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covered with pale hairs, and variegated with a dead yellow; the body is of a tawny brown, divided by dusky rings, and covered with short, firm, whitish hairs, which the animal can erect at pleasure; the legs are of a dusky brown, strong-jointed, and furnished with forked, hard, horny toes, having some stiff hairs on them. The wings are of a pale dusky yellow, their ribs being beautifully jointed, and evidently hollow; and the scales, which constitute what are called the hairs, or feathery substances, are very numerous, narrow, and sharp, both at their edges and points.

This little animal lives in the hollows of the flowers of plants, like the straw-coloured Chinch; and seems calculated to do at least as much mischief, being equally as minute, more covered with hairs or short bristles, and to all appearance, both from its structure and motions, able to drive them into the tender membranes of the brain with more force. It leads an erratic life, wandering from flower to flower; however, it shews a predilection for those which are sweetest. The damask rose, the stock July-flower, and the wall-flower, are often covered with these insects; nor do they disdain the lupine and the pea.

How far head-aches may be attributed to these little creatures, is a subject which has as yet been but imperfectly investigated. Certain, however, it is, that many feel this complaint after smelling nosegays; and some have died of the effects produced from large quantities of violets and other flowers lodged in their chambers. Physicians, indeed, have ascribed the deaths of many of their subjects to the powerful odours of these plants; but it is much more probable that they originated from these insects.

CHINESE FISH. This fish is of a round figure, and about a span long; has a head like an eel, small eyes, and a long tail; and is green on the back, and white on the belly. It is a fresh-water fish; and is esteemed salubrious when caught in running streams, but otherwise when taken in ponds and stagnant waters.

CHITON. A genus of multivalve shells, the inhabitant of which is the doris. The shell is plated, and consists of many parts, lying transversely on each other. The species are numerous; but the following are found on the British coasts.

CHITON, HAIRY. This species has seven valves; and is thick-set with short hairs. The shell is five-eighths of an inch long.

CHITON, MARGINATED. This animal is found on the coasts of Yorkshire. The shell is composed of eight valves; and the margin is serrated and reflected.

CHITON, SMOOTH. This species is found on several parts of the Caledonian shores. The shell consists of eight valves, entirely smooth; with a longitudinal mark along the back, which is a little elevated. Its size is equal to that of a wood-louse.

CHIUREA. An appellation given by Cardan, Oviedo, and some other authors, to the opossum.

CHLOREUS. A name given by some naturalists to the common yellow-hammer, or emberiza citrea.

The term Chloerus is also used by many of the earlier writers to express the galbula, a very elegant and beautiful bird of the thrush kind, almost entirely of a yellow colour.

CHLORIS. A bird commonly called in England the green-finch, a well known warbler, of the size of a sparrow, and remarkable for its green co-

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lour, as well as for the largeness of its beak, in which respect it approaches to the coccothraustes. It builds in hedges, and feeds on the seeds of vegetables.

CHOEROGRYLLUS. See HEDGE-HOG.

CHOIROS. An Aristotelian appellation for the cernua, or acerina, of the Latins; in English, the ruffee. This fish has received a variety of names; but it is properly a species of perch; and is distinguished by Artedi from the others of that genus under the title of the perch with only one fin on the back and a cavernous head.

CHONDROPTERYGII. A Linnæan term for one of the great classes or families of fishes; the characters of which are, that the rays of the bones are not finny, but cartilaginous; that the bones of the body are also cartilaginous; and that the mouth in the generality of the species, is placed in the lower part of the body. The name is derived from Chondros, a Cartilage; and Pterugion, Fin, or Wing.

CHOUGH, CORNISH. This bird, which appears to be of the magpie kind, is about seventeen inches long, and thirty-three broad, when the wings are extended. It weighs about twelve or thirteen ounces; and is almost as large as the crow, and nearly of the same shape. The bill, legs, and feet, are red; but the feathers all over the body are black. It is remarkable for the uncommon softness of its modulations when it applies for food to those who usually care for it; and equally remarkable for its frightful shriek when any strange object approaches it. It is usually kept about houses in Cornwall; where it becomes tame like the raven or magpie, and is equally mischievous, delighting in purloining money, or any splendid bauble which comes in its way. In its wild state, it is very apprehensive of danger; and accordingly builds its nest in the most inaccessible cliffs, and in the middle of the steepest rocks. When tamed, it is very amusing, docile, regular, and constant to the habits it acquires. It goes early to roost; and, during tempestuous weather, generally takes shelter in some unfrequented place; but, in a mild and serene season, it sits either on the ridges of houses, or struts about on the ground in a very stately manner.

Aldrovandus thinks that this bird is peculiar to the Alps; but it is also found in Crete, Ireland, and Wales, as well as in the county of Cornwall.

CHOUX. A name given by some naturalists to a species of shell-fish of the cordiform or buccardium kind. Fabius Columna has described it in a very elegant manner; and Lister has exhibited a double representation of it. See HEART-SHELLS.

CHIREMPS. The Grecian name of the fish called chromis by naturalists. It is a species of the sparus; and is distinguished by Artedi under the name of the sparus with the second ray of the belly-fins very long.

CHRISTOPHORUS PISCIS. A name sometimes given to the faber; or, as it is generally called, the gilded fish.

CHROMIS. A small fish caught in the Mediterranean, seldom exceeding three inches in length, of a moderate thickness, and of a dusky brown colour. Artedi, who accurately examined this animal, does not allow it a distinct generical name, but makes it only a species of his genus of sparus, styling it the sparus with the second ray of each belly-fin carried to an extreme length.

Chromis is also a name used by Bellonius to express a large fish caught in the Mediterranean,

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more usually described under the appellation of the umbra.

CHRYsalis. A term in the history of insects of similar import with Aurelia, for which it is indiscriminately used.

The word Chrysalis, from Chrysos, Gold, seems to imply a peculiar yellow, or golden colour, usually found in the nymphæ of some species of insects; but this is merely accidental, as it is not perceptible in all nymphæ. Some, however, confine the extent of the appellation Chrysalis to the nymphæ of butterflies and moths.

CHRYsomELA. A genus of insects frequently confounded with beetles, the antennæ of which are formed like bracelets, or necklaces of beads, and are thickest towards their extremities. The body is of an oval figure; and the thorax is oblong and rounded. This genus contains a variety of species.

CHRYsomELA, BLUE-GREEN. This is one of the largest species of the kind, though far from being a conspicuous insect. The head is small, the legs are slender, and the belly is smooth. The back is roundish, or convex; and the colour is an admixture of blue and green, with a very fine tincture of gold-colour diffused over the whole. The margins of the cases of the wings are somewhat prominent, and marked with a few hollow small spots entirely surrounding them; and the feelers, legs, and belly, are green. It is commonly found in meadows during the months of May and June.

CHRYsomELA, RED-BREASTED. The cases of the wings of this insect are reddish; and the head is small and black, as well as the body, legs, and the lower part of the breast and feelers. It is seen on some species of willow-trees in June and July.

CHRYsomELA, BLUE-GREEN, with a red breast and thighs. The head and cases of the wings of this small animal are of a beautiful shining green, with a tinge of blue; there are a few hollow spots on the head; the breast is small, convex, and of a reddish colour, with a cast of blue-green; and the upper parts of the legs are reddish, and the under black. It is common in most parts of this kingdom.

CHRYsomELA, BLACK. This pretty large insect is entirely black. The breast and cases of the wings are marked with small hollow points placed very near each other; the wings are flexible, soft, and blunt; and the feelers consist of twelve joints. It resides in quarries, and has a slow, creeping motion.

CHRYsomELA, SMOOTH BLACK. The bases of the feelers of this insect are yellowish; the joints of the wings are neither hollow nor striated; but the black colour with which this animal is covered exhibits a blueish cast.

CHRYsomELA, PURPLISH BLACK. This insect is found on the birch-tree, on the leaves of which it feeds. The colour is a blackish blue inclining to purple, or rather to violet; the belly, feet, and feelers, are black; the head and breast are marked with minute hollow, irregular points; the cases of the wings are streaked; and the eyes are so small as to be hardly perceptible.

CHRYsomELA, PURPLISH BLACK, sprinkled with hollow points. This species nearly resembles the former, except that it is larger, and that the cases of the wings are marked with hollow points irregularly dispersed, but not streaked. It is found, during the vernal season, on alder-trees.

CHRYsomELA, PURPLISH BLACK, with the breast

yellow. This insect frequents the willow, and is entirely of the same colour, shape, and size, of the former, except that the breast is yellow on the sides, round in the middle, and of a violet-colour, but somewhat blacker on the centre. The head and lower belly are black; and in the middle of the red on the breast there appears a black point.

CHRYsomELA, SHINING GREEN. The breast of this insect is smooth; and the cases of the wings are marked with hollow points, which touch each other. Towards the vent, this animal becomes of an obtuse figure; and it seems to expand the cases of it's wings with difficulty. The feet and feelers are black; and the breast is very slightly marked with points. It is found on willows.

CHRYsomELA, SHINING GREEN, with the breast hollow before. In this species the breast is only hollowed at the top; and in other respects it resembles the preceding.

CHRYsomELA, SHINING GREEN, with a flat breast. This species differs from the former in being somewhat less, and of a rounder figure.

CHRYsomELA, PALE GREEN. This insect is found on willow-trees; and is distinguished from the other varieties by the paleness of it's colour, and the nine rows of points placed lengthwise on each case of the wings. The eyes are black; and the bottoms of the feet are white.

CHRYsomELA, RED, with a cylindraceous breast. The flower-de-luce affords shelter to this variety. It is of the middle size; the breast, the cases of the wings, and the top of the head, are red; but the feelers, eyes, knees, belly, breast-plate, and the under-part of the head, are black. The breast-plate, which is considerably narrower than the cases of the wings, is hollow on each side; and the cases of the wings themselves are marked with hollow points of a moderate size.

CHRYsomELA, COPPER-COLOURED. This animal is commonly found on willows, is of a middle size, and appears like red copper highly polished.

CHRYsomELA, BLACKISH BLUE, with red cases to the wings. This insect is found on the poplar-tree in the beginning of spring. It is a pretty large animal; it's red wings are marked with small points; and the extremity of each case of the wings has a black spot. The breast is smooth, and of a greenish-black colour; and the corselet, belly, and feet, are of the same colour; but the feelers are black. The cases of the wings of this kind are not composed of plates, or leaves, but seem to be made up of eleven joints, the last of which is the largest.

CHRYsomELA, RED, CYLINDRICAL-BREASTED, with red cases to the wings. This species is found on the branches of the asparagus, on the stalks of which it subsists. It is a small insect; the head is of a blackish blue colour; the feelers are black; and the breast, which is narrow and cylindrical, is marked behind with two black points. The cases of the wings are oblong, yellow, and very pale on their external edges; and on each of them there is a blue spot resembling a cross.

CHRYsomELA, GREEN-BREASTED, with red cases to the wings marked with a blue cross. The colour of the head and breast of this insect is a copper green; the feelers and feet are black; and the tints over the whole body are elegant and attractive.

CHRYsomELA, OBLONG BLACK, with red cases to the wings marked with four black spots. This is a pretty large species, and of a roundish shape. There are two large spots on each case of the wings,

the first of which is oval, and the last more circular. The feelers are almost dentated; and the breast is short.

CHRYSOMELA, RED, with the cases of the wings marked with five black spots. This insect is found on the willow-tree, and is one of the largest of the kind. The head is black; the breast is red, except in the middle, where it is black; on each of the cases of the wings, which are red, there are five large black spots of an unequal size; and the belly and lower parts of the feet are black.

CHRYSOMELA, LONG DUSKY, with an incurvature stamped on the cases of the wings. The breast of this insect is grey, slightly covered with white hair; and the cases of the wings are of a greyish brown, with a white mark on each of the figure of the Roman S.

CHRYSOMELA, WITH DUSKY WINGS. This species is no larger than a flea; the body is black; the breast is brown; and the wings are livid on their back parts.

CHRYSOMELA, LIVID. This variety is likewise small; the eyes are black and shining; and the colour is a pale livid.

CHRYSOMELA, REDDISH ON THE SUPERIOR PART. On the breast of this species there are two black spots, and several on the cases of the wings; the head is black; and the size is moderate. This creature frequents poplar-trees.

CHRYSOMELA, BLACKISH BRASS-COLOURED. The edges of the cases of the wings of this insect, as well as the breast, are yellow; but the middle of the breast and head are of a blackish copper-colour; the lower part is entirely black; the feet are of the same colour; and the body is of an oblong figure.

CHRYSOMELA, BRASS-COLOURED, with two yellow lines on the cases of the wings. The body of this insect is oblong; and there is a yellow line on the lateral edge of the breast, in the centre of each case of the wings, and on their external edges. The legs, and the internal part of the thighs, are yellow; and the feelers are knotted.

CHRYSOMELA, BLACK-BREASTED, with red cases to the wings marked with a black spot. This species is of the middle size; the body is of a narrow oblong figure; the feelers, head, breast, and belly, are black; the wings are white; the feelers are remarkably small; and the cases of the wings are of a bright red, furnished with eight streaks, composed of hollow points whose bases are black.

CHRYSOMELA, BLUEISH GREEN, with a red breast and thighs. This insect makes it's nest in the galls of the willow-tree. The head and cases of the wings are of a shining blueish green, marked with hollow points; the breast, which is small, and marked with a reddish green, or rather a chestnut-colour, is thick and convex; and the feelers and bottoms of the feet are black.

CHRYSOMELA, YELLOW TESTACEOUS, with short wings. This animal lives on flowers, and is scarcely bigger than a louse. The body is smooth and oblong; the feelers are full of knots; and the cases of the wings are furrowed, and shorter than the two joints of the belly.

CHRYSOMELA, OBLONG TESTACEOUS, with accumulated cases to the wings. This very minute insect is of a chestnut-colour, has filiform feelers, and the cases of the wings appear as if painted.

CHRYSOMELA, DUSKY, with a blackish head. This species subsists on the leaves of the willow-tree, and is somewhat less than a flea. The body is oblong; the feet are somewhat paler than the

body, which is of a deep chestnut-colour; and the head is black.

CHRYSOMELA, WITH DUSKY CASES TO THE WINGS, and a yellow margin. The head of this animal is brown; the breast and feet are yellow; the cases of the wings are almost black; the feelers are alternately black and yellow; the wings are brown, with black veins; and the belly is yellow, and marked with a broad black line.

CHRYSOMELA, TESTACEOUS. This insect is found, in the beginning of spring, among rotten wood, and is placed by authors among the largest kinds. The body is of an oval figure, and a chestnut colour; the eyes are black; the feet and feelers are red; the under-parts of the feet are white; and the cases of the wings are marked with hollow points.

CHRYSOMYTHRES. A name given by some naturalists to the goldfinch.

CHRYSOPHRYS. An appellation given by the ancient Greek and Latin authors to a fish called aurata by the moderns. It is a species of sparus.

CHRYSOPIS. A species of fly so called from the beautiful gold-colour of it's eyes. The body is green, and longish; the wings are of a silvery colour, extremely thin and transparent, with green ribs or nerves; and the antennæ are very slender and blackish. It flies very slowly, generally settles on elder-trees, and it's smell is pretty strong.

CHUB. This fish, which is very coarse, and full of bones, frequents the deep holes of rivers; and, during the summer season, commonly lies on the surface of the water beneath the shade of some tree or bush. It is very timid, darting to the bottom on the smallest alarm; but it soon recovers itself, and resumes it's situation. It feeds on worms, caterpillars, grasshoppers, beetles, and other coleopterous insects which happen to fall into the water; and, in cases of necessity, it even has recourse to cray-fish.

The Chub derives it's name from it's head, not only in the English, but also in many other languages. It does not grow to any considerable size, seldom exceeding the weight of five pounds, though Salvianus mentions some which were eight or nine. The body is oblong, rather round, and nearly equal for a considerable part of it's length. The scales are large; the irides are silvery; the cheeks are of the same colour; the head and back are of a deep dusky green; the sides are silvery, though in summer they assume a yellow colour; the belly is white; the pectoral fins are of a pale yellow; the ventral and anal fins are red; and the tail is slightly forked, and of a brownish tinge, but shaded with blue at the extremity.

The best manner of fishing for the Chub is to prepare a very strong rod of a sufficient length, with a grasshopper affixed to the hook; and to retire as far as possible from the verge of the stream, that the fish may not be apprehensive of any danger; for, if the angler be concealed, the Chub seldom fails to take the bait: nevertheless, care must be taken to play it sufficiently, lest, from the powerful exertions of the fish, the tackle should give way. In March and April, the Chub may be caught with large red worms; in June and July, with flies, snails, and cherries; but in August and September, with pounded cheese mixed with a little saffron and butter. Some anglers make a paste of cheese and Venice turpentine as a bait for the Chub in winter, at which season this fish is supposed to be in it's highest perfection, the bones be-

ing less troublesome, and the flesh more firm and better flavoured. The angler, however, in order to obtain success, must in cold weather keep his bait at the bottom, and in hot near the surface of the water.

CHUCHIA. An appellation given by Cardan, Oviedo, and some other authors, to the opossum.

CHURR-WORM. The name given by some naturalists to the gryllotalpa.

CICADA. A genus of insects of the order of hemiptera, peculiar to Italy and some other warm climates. It has large wings; and makes a noise like that of a cricket, from which circumstance it is by some called the balm-cricket.

This insect, when powdered and mixed with pepper, is recommended by some of the medical faculty as a specific for colics; and, when reduced to ashes, is administered in nephritic cases.

CICADA AQUATICA, or the **WATER GRASHOPPER.** A name very injudiciously applied by Rondeletius and others to an animal frequently found in stagnant waters. It is of a greyish colour, with six legs, and the appearance of rudiments of wings; and is remarkable for a sort of mask before it's face, which it lifts up at pleasure. It is a poor, defenceless creature, the prey of almost all other water insects, and even of those which are greatly inferior to itself in size. It seems to have no relation to the grasshopper, but is the hexapode or worm-state of one of the libellæ or dragon-flies. The hind-legs, which are considerably longer than the others, are used as oars, in the act of swimming, in the manner of those of the notonecta.

CICADA, GREEN-WINGED. This insect has a yellow head, and is as large as a fly, but very narrow in proportion to it's length. The external wings are of a fine deep green colour, and the internal ones of a blueish grey; the covering of the breast being also green, but paler than the wings. The head is yellow, marked with two large spots on the hinder part, and several small ones at the sides; and there are some transverse streaks on the forehead. The body is of a blueish grey; and the legs are yellow. It is commonly found on aquatic plants in autumn.

CICADA WITH YELLOW EXTERNAL WINGS. This species is about the size of a common fly; and is wholly of a beautiful yellow colour, except when the wings are closed, and then a longitudinal black line appears on each side of the back, so divided in the middle as to exhibit the form of two lines, the one running from the breast, and the other from the tail to the middle, where they are obliquely separated; the two superior parts of these lines unite near the breast; and on each side of the head and breast there is a black spot. The feelers are short; the forehead is a little furrowed transversely; and, when the wings are extended, the body seems to be yellow in the middle, and black on each side. This insect frequents pasture-grounds in the month of June.

CICADA OF NORTH AMERICA. These animals are annually seen in Pennsylvania, though in small numbers; but, after certain intervals of fourteen or fifteen years, they appear in such prodigious numbers, as to obtain the name of locusts. Several sorts of insects prey on them with unceasing devastation, so that their numbers soon decrease; and their duration being naturally short, they quickly disappear.

North America affords two distinct species of Cicadæ; the largest of which was first described in the Philosophical Transactions of 1764.

Linnaeus enumerates eight species of Cicadæ; to which he gives the names of the American lanternaria, the Chinese lanternaria, the ranatra, the flea-locust, the Cicada with a double-horned breast, the manna-bearing Cicada, the Cicada of the elm-tree, and the Cicada of the rose.

CICADULA. An appellation given by Ray to a small species of insect, called by Swammerdam locusta pulex, found in May and June on the stalks and leaves of various plants, involved in a spumous white matter commonly called the cuckow-spit. This spume is not, as generally imagined, exsuded from the plant, but from the mouth of the animal; and, if it be carefully wiped away without injuring the insect, more will immediately be seen issuing from it's mouth, till it increases to as large a quantity as was removed.

There are several varieties of this animal; and, while enveloped in the spume, they resemble lice, some being white, others yellow, and some green. The hind-legs are somewhat longer than those before; and, at the shoulders, there is an appearance of the rudiments of wings. They often change their skins while immersed in this froth; and, at this period of their existence, only creep along; but, whenever they quit the plants, they hop and fly, being then furnished with large wings which cover their whole bodies.

CICERELLUS. A name given by Boccone, and some other authors, to the ammodytes, or sand-eel, the tobianus of Schoneveldt.

CICINDELA. A genus of beetles, having filiform feelers, prominent dentated jaws, and roundish and somewhat angular breasts.

CICINDELA, GREEN. The upper surface of the body of this very beautiful insect is splendidly variegated with green and gold; the cases of the wings are smooth and glossy, of the same colour with the body, and marked with ten white spots, some of which are roundish, others are oblong, and one is shaped like a crescent. The breast is narrow, roundish, and of a deep green; the head is small, depressed, and finely tinged with gold; the eyes are black and prominent; and the mouth is of the same colour, except that the upper-lip is white. The upper-jaw, which is prominent, contains several strong teeth; but the lower has only one tooth, which is placed at it's extremity. There are two pair of feelers, one pair consisting only of two joints and the other of ten. The legs are very long and slender; and at the bases of the thighs there is a kind of hard, oval substance. This insect, which is common in pasture-grounds during the vernal season, both runs and flies very swiftly.

CICINDELA WITH BLUEISH-GREEN CASES TO THE WINGS. This animal has a yellow belly, and it's body is nearly of an oval shape. The head, breast, feelers, and legs, are entirely black; the belly is of a yellowish tawny colour; the cases of the wings are of a blue green, variegated with hollow specks; and the feelers, which are short, consist of ten joints. This insect frequents woody places.

CICINDELA, BLACK. This species is entirely black, except that the cases of the wings are marked with six white spots and a white streak; and the thighs and legs are long, slender, and somewhat hairy. It is found in woods.

CICINDELA, BLACK, WITH A RED BREAST. The

The cases of the wings of this insect are of a blackish blue; the feelers are black; the head and feet are of the same colour; the breast is of a reddish brown; and the belly, which is oblong and narrow, is yellow behind.

CICINDELA WITH BLUEISH CASES TO THE WINGS, and a fallow-coloured body. This insect seems attached to shady places, and is nearly of the same shape with the former. The head, breast, feet, and feelers, are black; the belly, near the feet, is of a fallow hue; the cases of the wings are of a shining blue, marked with hollow points; and the feelers consist of six joints.

CICINDELA WITH A GREEN BREAST: The cases of the wings of this insect are of an iron-grey colour in front, and of a blueish black behind; the feelers are black; and the body and breast are of a fine blueish green.

The glow-worm is by some affirmed to be the female of the Cicindela; but with respect to this assertion naturalists are much divided.

CICLA. A name given by Artedi, and other late writers, to a species of fish called chichle by Aristotle and Ælian, and turdus minor by the generality of the moderns.

CICONIA. The classical name for the stork.

CIERGE. The French name of a sea-shell of the order of voluta. It is of the colour of common yellow wax, without any variegations on the surface; but, when the rough coat is taken off, it exhibits the zones and colours of the onyx. Among the virtuosi, it is generally known by the name of the onyx-shell.

CIGALE. A French term for the cicada, particularly the large species called acheta by the ancients. See **HARVEST-FLY**.

CIGALON. An appellation given by French naturalists to a smaller species of the cicada, as that of cigale is affixed to the larger. It appears that the ancients were unacquainted with two species of cicadæ, a great one and a smaller; the last of which they called tettigonia, and the first acheta. It has been generally imagined that the Cigalon of the moderns corresponded with the tettigonia; but Reaumur observes, that there are in reality three kinds of them, a large, a middling, and a small one; that the large was the acheta of the ancients; that the middle one was their tettigonia; and that the Cigalon, which is about the size of the hornet, was wholly unknown to them.

CIGNE. A name given by the French virtuosi to a species of voluta. When it appears in its natural coat, it has a rough surface, and is of a yellow colour, much like that of common wax; whence it is called cierge, or the wax-shell. When the external covering is removed, it appears of a very beautiful white, and then obtains the name of the Cigne, or swan-shell. When highly polished, so as to discover the internal structure, it appears zoned in the manner of the onyx; and is then called the onyx.

CIMEX. A genus of insects, the characters of which are these: the head is small; the back, towards the shoulders, is broad, and covered with a crustaceous substance; the shoulders are of an angular shape; the wings are partly crustaceous and partly membranaceous, and so formed as to exhibit the figure of a cross where they meet at the middle of the back; and the proboscis is long, bent under the belly, and always lies straight, and not in a spiral form.

Ray divides the Cimices into two kinds; those

of a shorter, and those of a longer and narrower shape. Of the first he describes eight species, and of the latter five.

CIMEX, BRASSY-BLUE. This insect is of the size of the large blue fly, but more flat. The upper surface of the body is of a beautiful blue colour, with a metalline cast; on the breast there is a longitudinal line, which at the lower extremity is terminated by one running across; the extremity of the shield is either red or white; and on each side there is a spot of the same colour. The legs and feelers are black; and the body, underneath, is of a blueish black. The spots on the male are white, and those on the female red.

CIMEX, HENBANE. This insect, described by Linnæus, is a very beautiful one. The body is very narrow; the head is black, except on the middle, where it is of a bright red; the breast is black at its forward extremity, but red in every other part, except two angular spots behind. The external wings are red, but marked with a black spot in the middle of each; so that, when closed, two of these spots appear on the back. The shield is black, with a red extremity; and the body under it is black; but in other parts it is red, except near the vent. The wings are brown and streaked; the feelers and legs are black; and the trunk and snout consist of four joints.

CIMICIFORMIS MUSCA. A name given by Ray to a species of beautiful insects, partly of the fly, and partly of the cimex kind. They are found under hedges, and in dry places. Of these creatures the above ingenious naturalist enumerates eleven species.

CINÆDUS. A fish common in the Archipelago, near the rocks and shores; supposed to be of the same species with the alphestes, and of the turdus kind, except in having its back-fin prickly the whole length. It is entirely of a yellowish hue, blended and variegated with an admixture of purple; its scales are rounded and indented; and its teeth are very strong and firm, and disposed in a double row in each jaw.

CINCLUS. A species of the tringa; a name sometimes given to the bird called in English the greater reed-sparrow; and, by the generality of authors, junco.

Cinclus is also the name of a species of sturnus, or starling.

CINNAMOLOGUS. An appellation given by the ancients to a bird which they imagined built its nest in the cinnamon-tree, or on rocks and precipices with the broken branches of that valued tree. The idle traditions respecting this bird render it impossible to determine its real kind; some affirming it to be the phoenix, and others a particular species of fowl.

CIRCEREILUS. A name by which some authors express the ammodytes, or sand-eel.

CIRCUS. An appellation given by Bellonius, and some others, to the melvus æruginosus, or moor-buzzard.

CIRI. A bird described by Aldrovandus; and called zivolo by the Italians, from the syllable zi, zi, which it frequently repeats. It is of the size of a sparrow; and has a thick bill, with a knob on the upper chap. The breast and belly are yellowish, sprinkled with brown spots; and the whole upper-part is of a brownish brick-colour. The male is more yellow about the head and neck than the female. The Ciri sits chiefly on the ground, and feeds on the seeds of plants.

CIRL, FOOLISH. This bird, so called by *Al-drovandus*, is of the same magnitude, and nearly of the same figure, with the former. The upper part of the head, and the whole back, are of the colour of rusty iron; the prime-feathers of the wings and tail are blackish, but their edges are of a rust-colour; and on the wings there are a few black spots:

CIRRIS. A small species of heron; called by some authors the *ardea hæmatopus*, or the red-legged heron, from it's beautiful red legs:

CITELLUS. A small animal of the mouse kind, which lives in caves and holes of the earth. It's body, like that of the common weasel, is long and thin; it's tail is very short; and it's colour is a pale silvery grey. It resembles the mouse in the want of external ears; but it has apertures which supply their places, in the manner of birds. These animals live in communities, great numbers of them being usually found together in the same cave, furnished with a large stock of nuts, chesnuts, and other fruits. Their flesh is well-flavoured; and their skins are much valued in cold climates. They are natives not only of the frigid regions, but likewise of Bohemia, Austria, and Hungary.

CITHARUS. A fish frequently caught in the German and Mediterranean seas. It is flat, and of the turbot kind, but entirely covered with large scales.

CITRIL. An appellation given by naturalists to the *citrinella*, or *verzellino*; a bird common in Italy, where it is generally caged on account of the beauty of it's plumage and the sweetness of it's notes. It's shape bears a strong resemblance to that of the common linnet. The head and back are green; the rump is a greenish yellow; and the neck, with a small part of the head behind, are grey.

CITULA. The name given by *Paulus Jovius* to the fish called *faber* by the generality of authors, and *doree* in English. *Pliny* calls it *zeus*; and hence *Artedi* has made *zeus* the generical name which comprehends this, and several other species, under the same arrangement. The *faber* is called the *zeus* with the prickly belly and the tail rounded at the extremity; and this seems to be the true specific name of the *Citula*.

CIVET. This animal, called the *Civet-cat* by various authors, constitutes a species of the *viverra*, or weasel, in the *Linnæan* system of zoology; and, by *Buffon*, is made to consist of two species, one of which he calls the *Civet*, and the other the *Ziber*. The latter differs principally from the former in having a longer and more slender body, a smaller nose, longer and broader ears, in being destitute of the mane or long hair running down the back, and in having the tail longer, and more annulated with different colours from one end to the other. Such are the variations which have induced this great naturalist to suppose that these animals are of different species; but, in conformity to the usual practice of zoologists, we shall consider them merely as two varieties of the same animal, and only altered in figure by climate, food, or education.

The *Civet* strongly resembles animals of the weasel kind in the length and thinness of it's body, the shortness of it's legs, the odorous matter which exudes from it's posterior glands, the softness of it's fur, the number of it's claws, and their incapacity of being sheathed; while it differs from them in being considerably larger, in having it's nose lengthened so as to resemble that of the fox, in it's tail being long and tapering to a point, and in it's tail being straight like those of the cat.

The colour of the *Civet* varies considerably; however, it is commonly ash spotted with black; but, in the female, it is more white; and the spots much larger. The colour on the belly, and under the throat, is black; and the other parts of the body are sometimes black streaked with grey: it has frequently the variegated hues of the tabby-cat; and, in short, it is impossible to give a precise idea of it's various external shades.

The opening of the pouch, or bag, which is the receptacle of the *Civet*, differs from that of the rest of the weasel kind; in not opening into, but under the anus. Besides this aperture, which is pretty large, there is another still lower down; but for what purpose it is designed, naturalists are not agreed. The pouch itself is about two inches and a half broad, and two long; it's opening makes a chink, from the top downwards, about two inches and a half long; and it is covered on the edges, and internally, with short hair. When the two sides are drawn asunder, the inward cavity may be seen, which is large enough to contain a pullet's egg; and round it on every side there are small glands, which open, and furnish that strong perfume so well known and formerly so much admired.

Those who are employed in rearing these animals for the sake of their perfume, usually collect it twice or thrice in the week, and sometimes oftener. The creature is on such occasions confined in a long box, in which it has not room to turn itself round: the person opens the box behind, drags the animal backward by the tail, keeps it in this position by means of a bar in front, and with a wooden spoon scrapes the *Civet* from the pouch with the greatest care; after which he quits his hold of the tail, and shuts the box. The perfume, thus procured, is put into a vessel, which is kept very closely shut; and, when a sufficient quantity is obtained, it is disposed of to considerable advantage.

The *Civet*, though a native of the warmest climates, thrives very well in temperate, and even in cold ones, provided it be carefully defended from the injuries of the air; and hence it is bred not only in Turkey, India, and Africa, but also in Holland, where the Dutch reap considerable advantage from it's perfume. The *Civet* of Amsterdam is reckoned the purest; it being frequently adulterated in other countries with various gummy substances, which at once increase it's weight and diminish it's value. The quantity which a single animal affords generally depends on it's health and nourishment. Raw flesh chopped small, eggs, rice, birds, young fowls, and particularly fish, are the kinds of food most acceptable to this creature; and these should be varied, in order to suit and entice it's appetite, and continue it's health. Though it drinks very sparingly, it waters frequently; and, on such occasions, it is impossible to distinguish the male from the female.

The perfume of the *Civet* is so very strong, that it communicates itself to every part of the animal's body: the fur is impregnated with it; and the skin penetrated to such a degree, that it retains the scent a considerable time after it is stripped off; and, were any person to be shut up with one of these creatures in a close room, so copiously is the odour diffused, that he would very soon be unable to support it. When the animal is irritated, the scent is much more violent than ordinary; and, if it be so tormented as to produce a perspiration, this is also a strong perfume, and serves to adulterate or increase what is otherwise obtained.

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In general, Civet is sold in Holland at about fifty shillings sterling an ounce; though, like all other commodities, its value alters according to the demand. It should be chosen fresh, of a good consistence, a whitish colour, and a strong, disagreeable smell. A very considerable traffic is still carried on in this perfume from Bufforah, Calicut, and other places of India where the Civet is bred; from the Levant also, from Guinea, and especially from Brazil in South America; though Buffon is of opinion that this animal is a native of the old continent only, and not to be found in a state of nature in the new. The best Civet, however, as already observed, is furnished by the Dutch; but the demand for it seems greatly on the decline.

Civet is certainly a much more grateful perfume than musk, to which it bears some resemblance; and formerly it was prescribed for the same medicinal purposes; but, at present, it is quite discontinued in pharmacy, and even proscribed from the toilet by persons of elegance and taste.

The Civet, in its natural state, is said to be a wild, fierce animal; and, though sometimes tamed, it is never perfectly familiar. It is furnished with strong cutting teeth; but its claws are feeble and inflexible. It is a light, active creature; and, like the rest of its kind, preys on birds, and other small animals over which its strength gives it ascendancy. It frequently creeps into farm-yards and offices in search of poultry; its eyes shine in the dark; and it probably enjoys more perfect vision by night than by day.

When these creatures can no longer procure animal food, they subsist on roots and fruits. They breed very rapidly in their native climates, where the heat seems to facilitate their propagation: but, in our temperate latitudes, though they furnish their perfume in great quantities, they seldom multiply; a convincing proof that it has no analogy with their appetite for generation.

CLADIUS. A name given by the ancients to the stag, or deer, when four years old, being then supposed to be arrived at full maturity. The Greeks had distinct appellations for every year's growth of this animal: in the first year, they called it nebrus; in the second, pattalea; in the third, dicrotus; and, in the fourth, Cladius, or cerastes.

CLAKIS. A provincial appellation for the barnacle, a small species of wild-goose.

CLAMS. The North American name of a species of shell, of which the wampum, or Indian money, is made.

CLARIAS. A fish of the silurus kind, commonly caught in the Nile, and eaten by the poorer sort of people, but of an insipid taste. The tail is broad and forked, furnished with two horny appendages of a round figure and a hand's breadth in length.

CLARK-GOOSE. A species of wild goose found in Zetland.

CLIO. A genus of sea-worms belonging to the order of molusca; the body of which is oblong, formed for swimming, and furnished with two opposite axes of a membranaceous structure.

CLOT-BIRD. A provincial name for the oenanthe.

CLUPEA. A fish of the order of malacopterygii, or soft-finned kind, in the Artedian system; and of abdominales in the Linnæan, under which are classed eleven different species. The branchiostegic membrane on each side contains eight lines; the belly, which is very acute from the singular situ-

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ation of the scales, appears as if serrated; and the back-fin is placed somewhat nearer to the snout than the tail. Artedi enumerates four species of this genus; namely, the common herring, the sprat, the shad, and the anchovy.

COAITI. A species of monkey, distinguished from others of that tribe by being destitute of a thumb, and consequently having only four fingers on each of the two fore-paws. The tail, however, supplies this defect; and with it the creature flings itself from tree to tree, with surprizing celerity. It has five toes on the feet, flat nails, a slender body, and a long tail. This animal, which is about eighteen inches in length, inhabits the vicinity of Carthage, Brazil, and Peru.

These monkeys are extremely active, and seem to enliven the forests of America. In order to pass from one tree to another when the branches are too far distant from each other for a leap, they form a kind of chain, by hanging down linked to each other by their tails, and swinging in that manner till the lowest catches hold of a bough of the next tree, and draws up the rest. Ulloa informs us, that they sometimes pass rivers in the same manner. These animals have been transported into Europe; but such is the delicacy of their frame, that they are unable to endure a variable climate.

COAL-FISH. This fish is common on the British coasts, particularly in the north: they swarm round the Orkneys; and their fry is the principal subsistence of a great number of the poorer sort of people.

The young of this fish make their first appearance on the Yorkshire coast, in vast shoals, about the beginning of July, at which time they are nearly an inch and a half long. In August, they are from three to five inches in length, and are then esteemed very delicate food; but, when about a year old, they grow so coarse as to be very little regarded. Fish of that age are from twelve to fifteen inches long; and begin to assume a black colour near their gills, and on their backs, which increases in proportion to their age.

Though these fish are but little esteemed when fresh, they are salted and dried for sale; and sometimes such quantities of them visit particular parts, that it is impossible to dip a pail in the sea without catching some.

The Coal-fish, which is of a pretty elegant shape, generally grows to the length of two feet and a half, and weighs near thirty pounds. The head is small; the under-jaw is somewhat longer than the upper; and the irides are silvery, and marked on one side with a black spot. There are three dorsal fins, the first consisting of fourteen rays, the second of twenty, and the third of twenty-two. The pectoral fins consist of eighteen rays, and the ventral of six; the first anal fin of twenty-two, and the second of nineteen. The tail is broad and forked. The colour of these fish has been observed by naturalists to vary; in some, the back, nose, dorsal fins, and tail, are of a deep black; the gill-covers are silver and black; the ventral and anal fins are white; and the belly is of the same colour. Others are of a dusky hue, and some brown; but in all the lateral line is straight and white, and the lower parts of the ventral and anal fins are of the same colour.

COAL MOUSE, or BLACK TIT-MOUSE. The head of this bird is black, with a white spot on the hinder part; the back is of a greenish ash-colour, the rump is a deep green, and the extremities

edges of the prime wing-feathers are also green. The weight of this bird is about a quarter of an ounce; its length, from the tip of the bill to the extremity of the tail, is five inches; and the extension of its wings is seven. It is distinguished from all other tit-mice by its inferior size.

COATI. A Brazilian name for the racoon. See **RACCOON**.

COATIMONDI. A Brazilian animal, of which there are several varieties; though their natural history is so imperfectly known, that they have generally been blended under one general description.

The Coatimondi is remarkable for the extreme length of its snout, which in some measure resembles that of a hog, but is elongated to a surprizing degree. It bears some affinity to the racoon, except that the neck and body are longer, that the fur is shorter, and that the eyes are smaller. But the principal distinction between this and all other animals, consists in its snout, which is moveable in every division, and reverts at the extremity. Like the racoon, it rests on its hinder legs with great facility, and in this position carries its food to its mouth with both its paws.

This animal has been known frequently to prey on its own tail, which is rather longer than its body; but this strange appetite is not peculiar to the Coatimondi alone; the maucauco, and some of the monkey tribe, do the same, and seem to feel no pain in wounding a part of their body so remote from the centre of circulation.

The Coatimondi is about three feet long from the tip of the nose to the extremity of the tail; the fore-paws are divided into five toes, the nails of which are long, black, crooked, and hollow like those of the beaver; the under-parts of the fore-paws are covered with a soft skin; and at the ends of the heels there are several callosities, half an inch in length, and one-tenth of an inch in breadth, which cling together like a marigold when it shuts up its flower during the night. The hair is short and unequal, and of a black colour on the back and some parts of the head, as well as on the paws and snout; but on the rest of the body it contains a mixture of black and red, and under the neck and belly has somewhat of a golden tinge. The tail is surrounded with annular stripes of black and red; the eyes are small; and the ears are round, like those of a rat, and covered with very short hair externally, but internally with long whitish hair. In each jaw there are six fore-teeth; the canine teeth are very large, of a greyish colour, and somewhat transparent; the mouth is large, resembling that of a hog; and the under-jaw is much shorter than the upper.

This creature seems to be sportive and amusing in a tame state; but, if left at liberty, will not only destroy poultry, but all other animals over which its strength gives it the superiority. It is playful with its keeper, but is nevertheless obstinately bent against receiving any instruction; and neither threats nor caresses can induce it to practise any arts to which it is not naturally inclined. When it sleeps, it rolls itself up in a lump, and in that position often continues for fourteen or fifteen hours at a time.

COBITIS. A small fresh-water fish, commonly called in England the loach. It greatly resembles the gudgeon both in shape and colour, but is much smaller, being never more than three inches long. Its body is soft and slippery; its tail is flat and broad, and its scales are extremely minute. Its colour is brown, spotted with black; and from its

upper-jaw proceed three pair of beards. This fish, which is caught in the rivers of many different countries, is esteemed very delicate food, especially when young.

Artedi enumerates three species of the Cobitis; and Linnæus makes it a genus of abdominales, including five species.

COBITIS ACULEATA, or OXYRYNCHUS. This species is armed with two prickles on the coverings of each of its gills, by means of which it moves very nimbly among stones at the bottoms of rivers.

COBIUS. The Greek appellation for the gobius marinus, or sea-gudgeon, distinguished by Artedi under the name of the blackish variegated gobius with fourteen rays on the second fin of the back.

COBIUS LEUCOTERUS. A Greek name for the fish called gobius albus by modern writers. It seems to be a genuine species of the gobius; and is distinguished by Artedi under the name of the gobius with a blue ventral fin, and the rays of the anterior back-fin rising above the membrane; which seems to be a sufficient discrimination from all the other species.

COBRA DE CIPO. An appellation given by the Portuguese to an American serpent, more usually known by its Brazilian name boitjapo.

COBRA DE CORAL. An American serpent, called by the natives ibibiboca. It is about two feet long, and beautifully variegated with a fine red colour.

COBRA DE LAS CABECAS. A Portuguese name for an American species of serpent of the amphisbæna kind, the bite of which is very fatal. It lives under ground, and feeds on ants.

COBRAS DE CAPELLO. A Portuguese name for a peculiar species of serpent called by authors *serpens Indicus coronatus diademate*; in English, the spectacle-snake, so named from the strange resemblance of the back of its head and neck to a pair of spectacles. It grows somewhat larger than the common viper; the snout is long; the head is flat, or depressed; and the bite is very fatal. It is supposed by many that there is a stone lodged in the back-part of the head, which is a specific for its bite; but the stones generally known under the appellation of lapides Cobræ de Capello are all artificial compositions.

COBRE DE VERD. A Brazilian serpent, so called by the Portuguese; but, by the natives, boiobi.

COCCINELLIA. A genus of insects of the coleoptera kind; the distinguishing characteristics of which are, that the antennæ are clavated and truncated; and that the thorax, with the exterior wings, which are marginated, form an hemispherical figure. There are several species of this genus, distinguished by the colour and spots of their wings; among which are included all the lady-cows, commonly so called.

COCCOTHAUSTES. A bird with a very short body and large beak; whence it is called, in English, the gross-beak, or hawfinch. It is considerably larger than the chaffinch; its head is very large in proportion to its body; and its large beak, which tapers from a very thick base to an acute point, resembles a funnel. This bird, which is common in Germany, lives in the woods and mountains during the summer; but in winter it retires to the champain country, and sometimes visits England during that season. It feeds on the kernels contained in the stones of fruits, which it breaks with

with great dexterity; and also on the seeds of many different plants.

COCCOTHAUSTES CRISTATA. An appellation generally given by naturalists to the Virginian nightingale; that bird being truly a *Coccothraustes*, though it has received the name of nightingale on account of the sweetness of its modulations.

COCCUS. A very comprehensive genus of the hemiptera class of insects; the characters of which are, that the trunk arises from the breast; that the body is setose behind; and that the two wings are placed erect, and only to be found in the males.

This genus comprehends all the progal insects of Reaumur.

COCCUS ILEX. This insect, which is known among druggists by the name of kermes, is a native of the berry-bearing ilex, a species of oak. It appears to be a membranaceous bladder of the size of a pea, smooth and shining, of a brownish red colour, covered with very fine down or cinereous powder, and swelling with reddish eggs, which being fricated, pour out a crimson fluid. It is found in the warmer climates during the months of May and June. In March, a species of insects, less than the seeds of millet, is first perceptible, of an oblong oval form, only a little narrowed towards the tail. The upper part is convex, red, and marked with exceedingly minute golden specks, and a few transverse wrinkles. It has six feet and two moveable feelers, almost of an equal length with the body; it has black eyes; and a double tail, of the same length with the body. It adheres to the trunk, branches, and leaves of the tree; and becomes torpid and immoveable, swelling and increasing in magnitude very sensibly. If viewed with a microscope at this period of its existence, it appears of a crimson colour, shining with golden specks, and lying in a sort of whitish down, which forms a kind of nest. The back, which rises very high, is of a round figure; and in the fore-part of the body three protuberances are perceived, of which that in the middle is thick and roundish, but those on the sides are more slender, and incurvated near the centre.

In the month of April the *Coccus* becomes as large as a common pea; its membrane or skin is firmer; and the down, which at first lay in bands on the skin, covers the whole surface like a sort of dust; and then the animal appears no longer, but only a bladder full of pale and watery blood.

About the middle of May, the interior part of the bladder, under the belly of the animalcule, is furnished with oval grains, each about half the size of a poppy-seed, and of a pale reddish colour speckled with gold: these consist of a thin, white, transparent skin, full of a pale reddish fluid. On each bladder there are about two thousand of these minute excrescences, which in the following spring affix themselves to the trunks and branches of the trees where they afterwards deposit their eggs, and thus continue the round of nature.

When the *Coccus* has attained its proper size, the skin of the belly is pulled up towards the back, leaving a vacant space between the belly and the down, so as to exhibit the appearance of hog-lice half rolled up; and in this form the animal lays its eggs, dies, and is dried up.

The *Coccus*, or kermes, is of two sexes, and hitherto the females only have been described: but the males are very different, being a sort of small

flies like gnats, with six feet, of which the four foremost are short, and the other two long, divided into four joints; and armed with three crooked nails. On the head appear two feelers a line and a half long, which are flexible, streaked, and articulated. The tail at the back part of the body is half a line long, and forked. The whole body is covered with two transparent wings; and the animal leaps about after the manner of a flea.

The harvest of the *Cocci* is more plentiful or otherwise in proportion to the severity of the winter, and their colour is also brighter and better in proportion to their vicinity to the sea. This drug, used by dyers, is in much less repute since the importation of cochineal, which more effectually answers every wished-for purpose.

COCCUS POLONICUS. This insect may with propriety be called the cochineal of the northern part of the world; for, as the cochineal loves only hot climates, this creature delights solely in cold ones. It is collected for the use of dyers; but it is greatly inferior to the genuine cochineal; and the crops of it are not only much smaller, but gathered with more difficulty. Being principally found in Poland, it is thence called the *Coccus Polonicus*, or the scarlet grain of Poland. However, it is to be met with in many other cold countries; and may very possibly be produced in some of the more temperate ones, where it is not known, being concealed by nature from the eyes of common observers.

This Polish *Coccus* is found affixed to the root of a small plant, and usually to one kind of vegetable, which from this circumstance has received the name of *polygonum cocciferum*. Authors inform us, that the same production is also found united to the roots of the mouse-ear, rupture-wort, pimpernel, and pellitory of the wall; and that it is seldom discovered except in very dry situations.

Breynius published a very curious account of this insect production in 1731; which incontestably proves it to be an animal, and affords abundant reasons for referring it to the progal insect class.

There are several other species of European *Cocci*, or kermes, mentioned by naturalists; but their accounts are so replete with confusion, contradiction, and obscurity, that we are induced to think the animal varies only from the particular plant on which it is found, and not from any essential difference in the species.

COCCYX. The Greek appellation of the fish called cuculus and lyra by the Latinists. It is a species of the trigla, and is distinguished by Artedi under the name of the trigla entirely of a red colour, with a bifid snout, and striated coverings to the gills.

COCHINEAL. An animal of the progal kind, of very great value on account of its use in dyeing. This production has been variously described by different authors: some have supposed it to be a vegetable excrescence from the tree on which it is found; while others have described it as a louse, some as a bug, and others as a beetle. As the Cochineal appears on importation, it is of an irregular shape, convex on one side, and a little concave on the other; but both are marked with transverse streaks or wrinkles. It is generally of a scarlet colour internally, and of a blackish red externally; and sometimes of a white, reddish, or ash-colour, which is accounted the best; and is the produce of Mexico.

The Cochineal insect is of an oval form, of the

size of a small pea, and furnished with six feet, and a snout or trunk. It brings forth it's young alive, and is nourished by sucking the juice of the plant on which it resides. It's body consists of several annulations; and, when once fixed on the plant, it continues immoveable, being subject to no farther change. Some pretend that there are two sorts of these insects: the one domestic, which is esteemed the best; and the other wild, which is of a vivid colour. However, they appear to be the same: with this difference only, that the wild insect feeds on uncultivated trees, without any assistance from man; whereas the domestic one is carefully removed to cultivated trees at stated intervals, where it imbibes a purer juice.

Those persons who tend these insects, place them on the prickly-pear plant in a certain order, and are very assiduous in defending them from other insects; and if any foreigners happen to mix with them, they are carefully separated by means of foxes tails. Towards the close of the year, when the rains and cold weather approach, which generally prove fatal to their existence, the feeders take off the branches or leaves that are covered with the Cochineal, which have not attained their utmost degree of perfection, and keep them under shelter till the end of winter. These leaves, which are very thick and juicy, supply the insects with sufficient nourishment while they are housed. When milder weather returns, and these animals are about to exclude their young, the natives form nests for them, of a size and construction adapted to their natures and necessities; and place twelve of them in every nest. These nests they affix to the thorns of the prickly-pear plant; and, in the space of three or four days, the insects bring forth their young, which leave the nests in a very short time afterwards, and creep on the branches of the plant till they find proper places to repose and receive their nourishment, and till the females are fecundated by the males, which, as in the cocci, differ very widely from the females, being winged insects; whereas the others only creep, or are at most stationary. When they are impregnated, they produce a new offspring; so that the propagator enjoys a triple harvest every year.

When the native Americans have collected the Cochineal, they deposit them in holes in the ground, where they destroy them by means of boiling water, and afterwards either dry them in the sun, in ovens, or on hot plates. From these various methods of curing them the different colours observable in those imported are chiefly produced. These insects, while alive, seem to be sprinkled over with a white powder, which disappears as soon as the boiling water is poured on them. Those which are dried by preternatural heat are considerably blacker than the rest; but it should be understood that, whatever colours they possess, they are all females, the males, as already observed, being winged insects, and of no value.

Cochineal is used in medicine as well as dyeing, and is said to possess nearly the same virtues as the coccus or kermes; but is seldom administered alone, and is probably used rather for the sake of it's colour than it's medical effects. When infused or boiled in water, Cochineal yields a crimson tincture, inclining to a purple: fixed alkali renders the crimson deeper, but lessens it's lustre; while volatile alkali heightens the colour, without diminishing it's lustre. The best method of applying volatile alkali to this purpose in dyeing, is to dip the cloth, when dyed with Cochineal, in a solution of sal am-

moniac, and then to throw some pot-ash into the solution, by which the volatile alkali of the sal ammoniac is disengaged.

Hellot observes, that if Cochineal, after the usual pulverization, be mixed with one-fourth part of it's weight of pure dry crystals of tartar, and the mixture be levigated into an impalpable powder, the saving of the Cochineal, both for the crimson and scarlet dye, will be about one part in four, without the smallest injury to the colour.

COCHLEA. A very large family of sea-shells, divided by authors into three distinct genera, from the figure of their mouths, some of which are circular, others semicircular, and some oval. These are expressed by the generical names *Cochleæ lunares*, *Cochleæ semilunares*, and *Cochleæ ore depresso*.

The characters of the *Cochlea ore abscisso* are the following: it has an univalve shell of a broad figure, with a conoid base, and an elevated summit, or sometimes a plane and depressed one. It is umbilicated, and of a pearly colour within; and it's mouth is of an oval figure, sometimes furnished with teeth, and at others destitute of any. The conic figure of these shells readily distinguishes them from all others.

The apex of several species of this genus is elevated to a considerable height, and forms various spiral turns, which are properly called *sabots* by the French, and *trochi* by the authors of other nations. In others, which bear a greater resemblance to the shape of common snails, the apex is less elevated; and, finally, in some of them, the apex is quite depressed. These distinctions sufficiently prove, that in general the elevation of the apex of shells is no genuine character of a genus; and, among the *trochi*, there is one single species which is umbilicated, while all the rest are otherwise.

From the figures of these shells, it will evidently appear, that the name *Trochi*, according to the common derivation of the word, but imperfectly expresses the several kinds, which are of very various formations. They are much better represented by the term *Cochlea ore depresso*, which conveys an idea of an absolute distinction that takes place in all of them, but in no other order of shells whatever.

COCK. The name of the males of gallinaceous birds; the distinguishing characters of which are, that the feet have each four toes; that the front of the head is adorned with a comb; and that the wattles are double, naked, and flat.

Of all other birds, the Cock seems to have been first reclaimed from the forest, and taken under the protection of man, in order to supply the accidental failure of the luxuries or necessities of life. Having thus been longest subject to human cultivation, he exhibits an amazing number of varieties, scarcely two birds of this species being found to resemble each other exactly in form and plumage. The tail, which is so great an ornament to the generality of these birds, is entirely wanting in others. The toes, in animals of the poultry kind, are usually four; but in one species of the Cock, which abounds in the environs of Dorking in Surry, they amount to five. The feathers, which in most of those animals we are acquainted with lie so smooth and in such beautiful order, are in a peculiar breed all inverted, and stand contrary to their natural direction; and there is a species imported from Japan, which, instead of feathers, seems to be entirely covered with hair. The above, with many other di-

verities, are to be found in this animal; all of which appear to be so many marks of this early prisoner's long and uninterrupted captivity.

At what period the Cock was first domesticated in Europe, is a question not properly ascertained; but it is generally supposed that he was introduced into the western part of the world from Persia. Aristophanes calls the Cock the Persian bird; and informs us that this fowl enjoyed that kingdom before some of its earliest monarchs. The Cock was so early known in the most savage parts of Europe, that, under the Druidical dispensation, he was prohibited to be eaten among the ancient Britons. Indeed, the domestic fowl seems to have banished the idea of the wild one. Persia itself, from which we first received it, seems no longer to know it in its natural form; and, if it were not sometimes found wild in the woods of India, as well as in those of the islands in the Indian ocean, it might perhaps be doubted in what form it first existed in a state of nature. But those doubts can no longer prevail, when we consider that the Cock is actually seen, in his ancient state of independence, in many islands of the Indian ocean, as well as in the forests on the coast of Malabar. In his wild state his comb and wattles are yellow and purple, and his plumage is black and yellow. There is another remarkable peculiarity in those of the Indian woods; namely, that their bones, when boiled, in Europe, are white; but, in India, as black as ebony: but whether this tincture proceeds from their food, (as the bones of animals, from their feeding on madder, are generally tinged with red) or from some other cause, it is not easy to determine.

When the Cock was first propagated in Europe, it is certain that there were distinctions which now no longer exist. The ancients esteemed those fowls whose plumage was reddish as invaluable, and considered the white ones as utterly unfit for domestic purposes; these they regarded as liable to become the prey of rapacious birds; and Aristotle thinks them less prolific than the former: indeed, this naturalist's division of those birds seems to be taken from their culinary uses; the one sort he calls generous and noble, being remarkable for fecundity; and the other sort ignoble and useless, on account of their sterility. These distinctions, however, are very different from our modern notions of the generosity of this animal; that which we call the Game-Cock being much less fruitful than the Dunghill-Cock, whom we regard with contempt on account of his comparative pusillanimity. It appears that the Athenians, as well as Europeans, had their Cock-matches; but it is probable that they did not make use of the same kinds on such occasions.

No animal possesses more courage than the Cock when opposed to any of his own species; and wherever refinement and polished manners have not been universally introduced, Cock-fighting seems to have constituted a principal diversion. In India, China, the Philippine Isles, and over all the oriental regions, it constitutes the pastime and amusement even of kings and princes. Fortunately for national reputation, this barbarous diversion is in England rapidly verging to decay; and, in a short time, it will probably become the sport of none but the lowest classes. It is a prevailing opinion, that the breed of this country is more bold and valiant than any to be found elsewhere; but the truth is, that the Cocks of China are equal if not superior in valour to the English ones, as well

as stronger and larger. It is somewhat surprising that those men who venture hundreds, and sometimes thousands, on the prowess of a single fowl, have not taken every method of improving the breed; and particularly that of crossing the strain, as it is called, by a foreign mixture. But as Cock-fighting is a mean, savage, and ignoble amusement, we would not wish to promote it by any instructions; since he who teaches the art of cruelty, can hardly be considered in any other light than as accessory to the fact.

The Cock's extraordinary courage is supposed to proceed from his being the most salacious of all other birds, as well as the only animal whose spirits are neither exhausted nor abated by sensual gratification. However, he soon becomes old, his radical moisture is consumed, and in three or four years he becomes absolutely unfit for the purposes of impregnation. 'Hens also,' to use the words of Willughby, 'as they, for the greatest part of the year, daily lay eggs, cannot suffice for so many births; but for the most part, after three years, become effete and barren; for, when they have exhausted all their seed-eggs, of which they had but a certain quantity from the beginning, they must necessarily cease to lay, there being no new ones generated within.'

Hens seldom clutch a brood of chickens above once in a season, though instances have been known when they have produced two. A domestic hen will lay upwards of two hundred eggs in a year, when properly supplied with food and water; and she will continue to lay whether impregnated by the male or not: but eggs of this kind, though equally proper for food and all other domestic purposes, can never be brought to produce a living animal.

From a contemplation of the egg of the common hen, in which the yolk and the white are readily distinguished, it will be easy to judge of the eggs of all other birds: but there is one kind of white which surrounds the yolk, and another exterior one; there are also ligaments which support the yolk, near the centre of the egg; and two membranes, the one surrounding the yolk, and the other the white; and there is, moreover, a third and fourth, which encompass these interior ones; and a shell defending the whole; which last serves to preserve the chicken from any accident till it is formed, and ready to leave its prison. The changes produced in this germ from time to time cannot possibly be discovered on account of the surrounding fluids. The white, however, is supposed to answer the purpose of milk, in feeding the young; and the yolk to be that part from which the growth proceeds.

The hen, if left to herself, forms but a very indifferent nest; a hole scratched in the ground among a few bushes is the only preparation she usually makes for this season of her patient expectation. Nature, almost exhausted by its own fecundity, seems to inform her of the proper season for hatching, which she herself testifies by a clucking note, and by discontinuing to lay. Frugal housewives, who find the eggs more profitable than the chickens, often practise arts in order to protract this clucking season, and sometimes entirely remove it. When the hen begins to cluck, they stint her in the quantity of her food; and, if that device does not produce the desired effect, they plunge her into cold water. This effectually retards her hatching, but it often produces a cold; and, when that is the case,

case, the poor animal frequently sinks under the operation.

If the hen is permitted to follow her own inclinations, she will seldom lay above twenty eggs in the same nest, without attempting to hatch them; but, if they are removed in proportion as they are laid, she will still continue in a vain expectation of increasing the number. In a wild state, she seldom produces more than fifteen eggs; but then her food is procured with more difficulty, and she is perhaps sensible of the care requisite to maintain a large family.

When the hen begins to sit, her patience and perseverance are almost incredible: she continues immovable for some days; and even when compelled to quit the nest by the cravings of nature, she speedily returns to her duty. During the time of her sitting, she carefully turns her eggs, and often places them in different situations; till, at the end of three weeks, or thereabouts, the young brood begin to indicate their arrival at maturity; and, by repeated efforts of their bills, perforate the shells, the hen still continuing to sit till they are all excluded. The strongest and best chickens usually first emerge from their prisons; the weaker ones follow after; but the most feeble of all generally die in this nascent state. The whole family being emancipated, the parent leads them forth in order to instruct them in the art of providing for themselves. Her affection and dignity appear then to alter her very nature, and render her an amiable bird. No longer cowardly or voracious, she boldly and indiscriminately attacks every creature that appears to have any hostile intention towards her young, and abstains from every kind of food which they are incapable of swallowing. When marching at the head of her little troop, she demeans herself as their commander, and makes use of a variety of significant notes for the purpose of summoning them to their food, as well as of warning them of approaching danger.

A certain mode of treatment has been devised, by which a hen that in the ordinary way produces but one dozen of young yearly, may generate as many chickens as eggs; and, consequently, near two hundred. The artificial method of hatching chickens in stoves, as practised at Grand Cairo in Egypt, or in a chemical laboratory properly graduated, as has been effected by M. Reaumur, is the contrivance alluded to. The Egyptians build spacious ovens, of a figure very different from ours, in which they place a great number of eggs, and by means of a gentle fire communicate to them the same degree of heat as if they were under the hen. In this situation they remain till the usual time of hatching; and by that means ten or twelve thousand chickens have frequently been produced at a time. But in this colder climate, the great difficulty of rearing chickens does not consist in hatching, but in clutching them after they are excluded. To obviate this difficulty, Reaumur has made use of what he calls a woollen hen; which in reality is nothing more than placing the chickens in a warm basket, and throwing a thick woollen canopy over them; but the whole apparatus was attended with so great an expence, as to render the scheme rather an object of curiosity than profit. However, a much better substitute might be found, and that from among the species themselves. Capons may be easily taught to clutch a fresh brood of chickens throughout the year; so that, when one little colony is thus reared, another may be brought

to succeed it. Indeed, this method is frequently adopted. First, the capon is so tamed, as to feed from a person's hand; then, towards evening, the feathers of his breast are removed, and the bare skin rubbed with nettles. After this process, the chickens being put to him, they quickly run under his breast and belly; and, by their friction, probably allay the stinging pain which the nettles had before produced. This device is repeated two or three nights; till the animal conceiving an affection for the young brood thus sent to his relief, continues to afford them that shelter they require. From this time the capon fosters the chickens like a hen, clutching them, feeding them, clucking, and rendering them every kind of office natural to the most affectionate parent. A capon, habituated to this service, will not easily resign it; but, on the contrary, when one brood is grown up, he will suffer another nearly hatched to be put under him, and treat them with the same marks of tender regard.

The Cock, from his salacity, is generally supposed to be a short-lived animal; but how long one of these birds will live, if left to itself, is not as yet well ascertained by naturalists. As Cocks are kept only for the sake of profit, and in a few years become almost useless, very few persons, from mere motives of curiosity, make the tedious experiment of maintaining a proper number of them till they die naturally. Aldrovandus is of opinion that they would in general live ten years; nor is it indeed probable that they would exceed that age.

The flesh of the Cock contains a great quantity of oil and volatile salt; but it is less esteemed than that of the hen, or rather the pullet, being dryer, less agreeable to the palate, and more difficult of digestion. The flesh of the pullet also contains much oil and volatile salt, and forms a most excellent aliment: it is pectoral, easy of digestion, and nutritive; it agrees with persons of all ages and constitutions; but it is best adapted to those who are delicate and sedentary; labouring people requiring stronger, as well as more substantial food. The eggs, which are a common aliment, are equally beneficial in health and sickness; they digest quickly, are very nourishing, abate the acrimony of the fluids, appease coughs, and meliorate the voice: they are likewise salutary for the breath, and greatly exhilarate the spirits; but they lose much of their virtues when boiled too hard.

As farms cannot with propriety be said to be stocked without fowls, as well as beasts, it will perhaps not be improper to exhibit some approved directions for the management of these domestic birds. Those hens which are the best breeders, as well as layers, should be selected; the oldest, indeed, are always the best sitters, and the youngest the best layers; but no sort will be fit for either purpose if kept too fat. The best age for setting hens is from two to five years old; and the best season is February, though any month between that and October will answer.

If fowls are fed with buck or French wheat, or with hemp, canary, or millet-seed, they will, on account of this treatment, lay a greater number of eggs than ordinary; and buck-wheat, either whole or ground, made into a paste, will fatten them very expeditiously: but, if chickens are intended to be reared, each of them should have two or three barley-corns immediately as they are taken from their nests, and so continue to be fed till they are fit for fattening.

The Cock was consecrated to Minerva, as the symbol

symbol of vigilance, to denote that genuine Wisdom is always on her guard: he often accompanies Mercury, who is deemed an active divinity; and was commonly sacrificed to the Lares, because of his being brought up in habitations of which those household gods were the guardians.

COCK, BANTAM. The Bantam Cock, though small, is very courageous, and will encounter any creature that offers to oppose him. He has a reddish bill, fine red eyes, and a curious comb on the crown of his head. His ears are covered with a tuft of white feathers; and his neck and back with long streaming orange-coloured feathers mixed with yellow. His breast, and the lower part of his belly, are black; his thighs are covered with long stiff feathers, reaching considerably below his knees; and his legs are invested with small feathers as far as his toes. His tail consists of stiff black feathers; among which there are two large ones which hang over the rest in the shape of a sickle. This bird, though it derives its name from Bantam in the East Indies, from which place it was originally brought, is now pretty common in England.

The Bantam hen is small and beautiful: her bill is yellowish; her comb is small and pale; and there are a few white hairs on the crown of her head. The skin round her eyes is reddish and bare; and her ears are covered with a brown tuft of feathers. The rest of her body, together with her wings and tail, are yellow variegated with dark brown; and her thighs and legs are feathered almost down to the toes. It must be observed, however, that the colour of the Bantam hen varies frequently.

COCK, HAMBURGH. The Hamburgh Cock is a very stately fowl. His bill is thick at the base, but ends in an acute point; his eyes are of a fine yellow colour, encircled with dark-coloured feathers, under which there are tufts of black ones which cover his ears. His comb, which is reddish, reaches about half way over his head, the hind-part being covered with dark-coloured feathers inclining to black. His throat and gills are of the same colour, with an admixture of orange and red feathers waving round his neck, which are black at their extremities. His breast and belly are of a dark colour spotted with black; and his thighs, as well as the lower part of his belly, are of a shining velvet black. The superior parts of his neck and back are of a darkish red; his tail consists of red orange-coloured and shining black feathers; his legs are of a leaden hue; and the bottoms of his feet are yellow.

COCK, INDIAN, OF ALDROVANDUS. The bill of this bird, which Marcgrave calls Mituporanga, is black at the extremity, but in every other part covered with a saffron-coloured skin of the same kind with that encircling his eyes. The feathers on his head and neck are of a deep black, and of a silky gloss; and on the top of his head there are a sort of spiral feathers, which, when erected, form a beautiful crest: each of these feathers is two inches and a half in length, and two lines and a half in breadth. The rest of his body is black, with a small admixture of green; there are some white feathers about the vent; and his legs are cinereous.

COCK, MOUNTAIN. This bird, which is of the size of a peacock, appears to be of the pheasant kind. His neck is long, and of a blackish colour intermixed with light ash-coloured spots; his head is black; his beak is short, broad, and elevated in the middle; his breast and belly are black; and his

wing-feathers are pretty long, and of a dusky blackish colour. The feathers under his wings, as well as his thighs, are whitish; his legs are covered with feathers of a dusky hue down to the toes; and there are several white spots on his tail, which, according to some authors, increase in proportion to his age.

The Cock of the Mountains is a native of various parts of Europe, and particularly of Ireland and Wales; but he is never seen in England except through mere accident. His flesh is esteemed very delicate food.

COCKATOO. A very beautiful race of birds of the parrot kind, distinguished from all others by their elegant crests. There are several distinct species.

COCKATOO, GREATER. This species, which is about the size of the raven, has a large, strong bill, with a skin over the base of the upper chap, where the nostrils are placed. Both the skin and the bill are of a blueish-black colour; and the head is large in proportion to the bill. The eyes, which are dark, are surrounded with a bare ash-coloured skin; the feathers of the head are very long and loose; but the top ones, which are the longest, the bird can erect or depress at pleasure. The plumage of the Cockatoo is in general white, though tinged with other colours in several parts. The tail is short, and consists of feathers of an equal length; the legs and feet are of a lead colour; and the toes resemble those of the parrot, of which bird the Cockatoo is a variety. It is a native of the East Indies; and is frequently heard to cry 'Cockatoo,' with great distinctness of articulation.

COCKATOO, GREAT BLACK. This bird is very large, being equal in size to any of the kind. The bill is strong, very much arched, and of a dusky brown colour, with an angle on each side of the upper mandible. The eyes are dark; the sides of the head, from the eyes to the under part of the bill, are covered with a red bare corrugated skin; the crest is of a lightish grey colour, the feathers of which are pointed and reflected upwards at their tips; and are either raised or depressed at the pleasure of the bird. The whole plumage, from the crest downwards, is of a blueish-black or dark lead-colour, rather paler on the under side than on the back and wings; the tail is pretty long; and the legs and feet are of a brownish-black hue, and covered with a rough scaly skin.

This bird is a native of Ceylon, and other oriental regions; and a representation of it, drawn from the life, was first sent to Europe by that very industrious naturalist John Gideon Loten, Esq. a Dutch governor in India.

COCKATOO, WHITE, YELLOW-CRESTED. The bill of this species is of a dark ash-colour, serrated on the sides of the upper mandible. There are very long fine yellow feathers on the top of the head, which the bird sometimes raises to a splendid crest. The eyes are placed in spaces of light lead-coloured bare skin; and the pupils are black, their irides being a bright orange. Beneath each eye there is a large spot of yellow feathers; and the rest of the plumage, from the head downwards, is white, except a faint shade of yellow on the breast, the sides under the wings, and the insides of the wings. The wings and tail are almost of an equal length; and the legs and feet are covered with a dark blueish lead-coloured scaly skin.

COCKATOO, WHITE, RED-VENTED. This bird is about the size of a common parrot; the orbit of



1. GREAT BLACK COCKATOO. 2. GREATER COCKATOO. 3. WHITE RED-VENTED COCKATOO.

4. WHITE YELLOW-CRESTED COCKATOO.

the eye is a yellowish red; the bill is white tipped with yellow; and the vent is white barred with crimson. The crest is white, except a few feathers underneath, which serve as a spring to support it when erected; and the rest of the plumage is of the same colour, with a yellowish tint towards the quill-ends of the feathers.

COCKLE. A bivalve shell, nearly equilateral and equivalve. The animal is a tethys; and there are two teeth, one on each side of the beak. Of the Cockle there are various species; which, however, may all be comprehended under the following, viz. articulate, multarticulate, heart, truncated, and square Cockles.

COCKLE, ACULEATED. This shell has high ribs diverging from the hinge to the edges; each rib is furrowed in the middle, and, near the circumference, beset with large, strong, and hollowed processes. One side of the shell projects farther than the other, and forms an angle. This variety, which is as large as a man's fist, is found near the Western and Orkney islands; and the colour is a yellowish brown.

COCKLE, ECHINATED. This shell is less than the preceding, being little more than six inches in circumference; the ribs, which are only sixteen in number, are echinated higher up; and the colour is white.

COCKLE, EDIBLE. This shell has twenty-eight depressed ribs, transversely striated; and is found on all sandy coasts, lodged a little beneath the surface, the situation being generally indicated by a depressed spot.

COCKLE, FRINGED. The colour of this shell is pure white; it is of a very brittle nature, having eighteen ribs rising into thinner spines; and its size is no larger than that of a hazel-nut.

COCKLE, SMOOTH. The figure of this shell is suboval, and somewhat depressed; the colour is a deep brown with faint longitudinal striæ; and a few transversal, concealed by a fine epidermis. It measures about six inches and a half in circumference.

COCK-ROACH. An insect of the beetle kind, very mischievous in warm climates, but especially on board of ships. Catesby, in his History of Carolina, mentions a particular species under the name of *blatta maxima fusca peltata*, which has been accurately described by the ingenious Edwards under the appellation of the Greater Cock-Roach. The head is covered with a kind of shield, of a light brown colour round its borders, and black in the middle, from which proceed two other shields of the same brown colour, and dusky in their centres, covering part of the upper side of the body, and exhibiting the appearance of short wings. The abdomen, or lower part of the body, which is of a reddish brown, and composed of eight annulations, is very flat, and serrated on its sides. The head, which is black, is only seen from beneath; but the eyes are brown. The horns are nearly two inches long; the legs, which are six in number, are of a reddish brown colour, each consisting of three joints, those next the body being smooth; the middle joints are beset with black prickles; the exterior ones of the feet are rough and hairy; and there are two sharp claws at the extremities.

COCOL. A very beautiful Brazilian bird of the kind, about the size of the common stork, the plumage of which is delightfully agreeable to the eye.

COCROTALEON. An animal generated between the hyæna and the lioness, and so called by the ancients. This creature is described as possessing many qualities peculiar to the mantichora; and, according to some naturalists, is only another name for the same animal. It is likewise called *leocrocotta*; and sometimes simply *crocotta*, or *cor-cotta*.

COD. The largest of the genus of *aselli*, called by authors *asellus maximus*, and sometimes *asellus varius*, *five striatus*: but, according to Artedi, it is a species of the *gadus*; and is distinguished from others of that genus by having a beard at the mouth, the superior jaw longer than the inferior, and an unfurcated tail.

These fish inhabit only the northern parts of the world, and appear to be confined between the latitudes fifty and sixty-six; those which are caught on either side of these limits being few in number, and very indifferent in quality.

Immense quantities of Cod-fish are found on the banks of Newfoundland, and the sand-banks which lie off the coasts of Cape Breton, Nova Scotia, and New England; and it is probable that they resort thither on account of the vast quantities of worms produced in these sandy bottoms. Another cause of their particular attachment to these spots, is their vicinity to the polar seas, whither they resort for the purpose of spawning.

The Cod-banks of Newfoundland are a sort of submarine mountains. One of them is deservedly called the Great Bank, as it extends four hundred and fifty miles in length, and upwards of one hundred in breadth: it lies about seventy-five miles from the island of Newfoundland, in North America; and the largest, best-flavoured, and fattest Cod, are found on its south side, those on the north being in every respect inferior. The season for catching them on this bank is from the commencement of February to the beginning of May. Those which are caught in May and June will keep tolerably well; but such as are taken in July, August, and September, unless extraordinary precaution is used, quickly spoil. Sometimes, indeed, this fishery ceases in a month or six weeks; but, at others, it lasts more than half a year.

On the approach of Lent, the fishermen hasten home, though they have not completed half their cargo, in order to attend the markets, which at that season are very advantageous. Sometimes, however, they effect a second voyage before others have collected a sufficient cargo for the first. The Cod are all taken with lines and hooks baited with the entrails of their own species, a small fish called capelin, and a shell-fish named chams; and an expert fisherman frequently catches four or five hundred in a day.

There are abundance of Cod-fish on the south and west coasts of Iceland, but very few are found on the north. They are likewise caught in great plenty on the coasts of Norway, in the Baltic, and off the Orkneys and Western Isles, beyond which latitudes their numbers gradually decrease as they advance towards the south; and before reaching the Straits of Gibraltar, they totally disappear.

Previous to the discovery of Newfoundland, the principal fisheries of Cod centered in the seas of Iceland and the Hebrides, which were the grand resort of ships of all commercial nations; but the greatest abundance was found near Iceland. This very evidently appears from the circumstance of Queen Elizabeth's soliciting permission of Chris-

tian VII. of Denmark to fish in those seas; though she afterwards repented of her request, and instructed her ambassadors at that court to insist on the privilege of a free and universal fishery.

Providence has graciously ordained, that this most beneficial fish to mankind, should be so extremely prolific as to supply more than the deficiencies of the multitudes annually taken. Leewenhoeck counted nine million three hundred and eighty-four thousand eggs in a Cod-fish of a middling size. They begin to spawn in our seas in the month of January, and deposit their eggs in rough ground, among rocks and shelves.

Cod-fish of a middling size are most esteemed for the table; and they are to be chosen by their plumpness or roundness, especially near their tails; and by the regular undulated appearance of their sides, as if they were ribbed. These, and other fish of this genus, are reckoned to be in season during winter; but the glutinous parts about their heads lose much of their delicate flavour after having been removed twenty-four hours from their native element. The general weight of those taken on our coasts is from fourteen to forty pounds, though they sometimes exceed sixty.

The Cod-fish is short in proportion to its bulk; the belly is very large and prominent; the jaws are almost of an equal length, with a small beard on the lower; the teeth are disposed in the palate, as well as the jaws; and the eyes are large. It has three soft fins on the back; the ventral fins are very slender, and the anal are two in number. It is ash-coloured on the back and sides, and usually spotted with yellow; the belly is commonly white; though the fish sometimes varies not only in colour, but also in the conformation of the head and other parts; and the side-line is broad, straight, and white, till it reaches opposite the vent, when it curves towards the tail.

Cod-fish are cured on ship-board in the following manner. Their heads are cut off, their bellies opened, and their guts taken out; and then they are laid side by side, head and tail, at the bottom of a vessel, for about eight or ten feet square. One layer being completed, it is covered with salt, and another laid on that, which is covered as before. All the fish taken in one day are thus disposed of; but great caution is used not to intermix those which have been caught on different days. They remain thus for three or four days, when they are removed into another part of the vessel, and salted again; and in this state they are suffered to continue till the vessel has either got her full cargo, or till she departs for her destined port. Sometimes, however, they are put into barrels, and packed up; and in that case they are denominated Barrel-Cod.

These fish, however, are not all cured with salt; some are carried on shore, and dried on the beach; namely, such as are fished for along the coast of Placentia in Newfoundland, from Cape Race to the Bay of Experts, within which limits there are several commodious harbours and places fit for drying them. Those who intend to dry them in the sun always fish for them during the summer season. A smaller sort of these fish is usually selected for drying; because, as they sooner imbibe the salt, they are best adapted for that purpose.

The tripes, roes, and tongues of the Cod-fish, are also salted and barrelled; the latter of which are usually thrown into the sea, in order to draw other fish to a particular spot, especially pilchards, for which they constitute an excellent lure. An oil

which is extracted from the Cod is said to answer all the purposes of train-oil, and is much used by curriers.

CODA LANCEA. An appellation given by Italian naturalists to the species of duck called by others the *anas caudacuta*, and vulgarly known in some parts of England by the names of the cracker or sea-pheasant. It differs from all other birds of the duck kind in the peculiar structure of its tail, which has two feathers longer than the rest, and terminating in a point.

CODDY MODDY. A bird of the gull kind sometimes called the winter mew. Its length, from the tip of the bill to the extremity of the tail, is eighteen inches; and the expansion of its wings is three feet nine inches. The bill, which is two inches long, and very slender, is black at the tip, and whitish towards the base. The irides are of a hazel colour; the crown of the head, and hind-part and sides of the neck, are white marked with oblong dusky spots; the forehead, the throat, the middle of the breast, the belly, and the rump, are white; and the back and scapulars are a pale grey, the last being also spotted with brown. The coverts of the wings are a pale brown, edged with white; the first quill-feather is black, and the succeeding ones are tipped with white; the tail is white, and crossed near the extremity with a black bar; and the legs are of a dirty blueish white.

During winter, this bird frequents those moist meadows which are situated in the interior parts of England. That gelatinous substance commonly known by the name of star-shot, or star-jelly, is generally supposed to owe its origin either to this bird, or to some other of its kind; and is in fact nothing else but the indigested remains of earth-worms, on which these birds feed, and which they frequently evacuate.

COGNIOL. A name sometimes given to the fish more usually called colias; a kind of mackerel which differs principally from the other species in being of an inferior size.

COINUS. An appellation given by some conchologists to the genus of shells called *porcellana* and *concha venerea*.

COJUMERO. A term used by some naturalists to denote the manati or sea-cow.

COLCUICUITIC. The American name for a bird of the partridge kind described by Nieumberg. It is variegated with black, white, and red, and exhibits a very beautiful appearance. These colours are for the most part not disposed in spots, but in longitudinal lines, on the back; on the belly, however, they assume the form of small short lines. The flesh of this bird is highly esteemed.

COLD-FINCH. A bird of the *cenanthe* kind, or nearly approximating to that genus, frequently seen near the Peak in Derbyshire. The belly is white; the breast is a yellowish brown; and the head and back are a brownish or greenish grey. The long feathers of the tail and wings are black, but with some variegation of white towards their extremities; and the bill is slender, straight, and somewhat ridged. It feeds on worms and other insects.

COLE-FISH. The *afellus niger* of authors, and by Linnæus ranked as a species of *gadus*. See **COAL-FISH**.

COLE-MOUSE. A small bird of the tit-mouse kind. See **COAL-MOUSE**.

COLE-PERCH. The name of a small fish caught near Dantzick, and several other places; and much

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much esteemed for it's delicate flavour. It bears a strong resemblance to the common perch, except that it is inferior in magnitude; has a larger head, and a greater variety of colours.

COLEOPTERA. An order of insects comprehending all those which have four wings; the external pair of which is hard, rigid, and opaque, and forms a kind of case for the interior pair; and whose mouths consist of two transverse jaws.

These animals are distinguished in English under the general appellation of beetles; of which naturalists have established a great number of genera, from the different conformations of their antennæ or horns, and other general marks, such as the scarabæus or beetle properly so called, the dermestes, cassida, coccinella, chrysomela, dytiscus, and tenebrio.

COLIBRI. A bird very remarkable for it's beauty, it's figure, it's manner of living, and the minuteness of it's size. It subsists on flowers, on which it seldom alights, but extracts honey from their nectaria by means of it's long, fine, and delicate tongue. There are some species of this bird which possess all the colours of precious stones, as well as the finest and most beautiful plumage that can be imagined. They fly with great rapidity; and are heard before they can be distinguished by the eye, making a kind of humming noise, from whence they are called humming-birds. See HUMMING-BIRD.

COLIC SHELL. A name given by some authors to the porcellana, or concha venerea, from it's supposed efficacy in curing the venereal disease.

COLIN. An American bird, called by the generality of writers the quail; but supposed by Nieremberg to be rather a kind of partridge. There are several distinct species of this bird, all very common in the Spanish West Indies, and much esteemed for the delicacy of their flesh.

COLIOU. An oriental bird described by Sonnerat, about the size of the European grosbeak. The head, neck, back, wings, and tail, are cinereous, with a tinge of yellow; the breast is of the same colour, and barred with black; the lower part of the belly and the top of the tail are reddish; the wings extend only a little beyond the origin of the tail, which is extremely long, and composed of twelve feathers of unequal lengths; the bill is black; the feet are of a pale flesh-colour; and the feathers which cover the head are narrow and long, and compose a crest which the bird can elevate or depress at pleasure.

COLLURIO. The name by which some authors have called the lanius or butcher-bird; the smallest, as well as one of the most destructive, of all the rapacious tribe.

COLMESTRE. A bird of the lagopus kind, more usually called otomo; and supposed to differ very little from the lagopus, except in changing it's colour during the summer season.

COLOCOLO. The Philippine name for a species of bird called also cassili, and corvus fluvialis or the water-raven. It's figure very much resembles that of the common raven; but it is truly an amphibious bird, living principally under water. It's colour is black; it's neck is remarkably long, and it feeds on various kinds of fish, frogs, and serpents. The Colocolo is sometimes seen under water in transparent streams, where it appears to be perfectly at ease, and running about with great swiftness; and, at other times, it ascends to the surface, and dries it's wings in the air and sunshine.

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COLPISCIS. An appellation given by some authors to the falx Venetorum, or sickle-fish, commonly called by the Venetians the marmot-fish.

COLUBER. The name of a very numerous genus of serpents; the abdomen of which is covered with scuta, and the under part of the tail with squamæ or scales. See VIPER.

COLUM. A bird very common at Surat in the East Indies, and supposed to be a species of the crane. It has a remarkable flexion in the aspera arteria; which the ingenious Dr. Parsons observes may serve for the retention of inspired air, while it plunges deep into the water in quest of food, or traverses different climates through various degrees of rarified and condensed air.

COLUMBA GREENLANDICA. An appellation given by some authors to a small, well-tasted aquatic fowl, called in English the sea turtle-dove.

COLUMBA MARINA, or SEA-DOVE. An East Indian sea-fish, apparently a species of the orbis or moon-fish. It receives it's name from the resemblance which it's head and prominent chest bear to those of the dove. It has no scales, but is variegated with several marks placed in a very singular manner on the back and sides. It is a scarce fish, and but little esteemed, being coarse and ill-tasted.

COLYMBIS. An appellation given by Belonius to a species of duck remarkable for a large tuft of feathers behind it's head, on which account it is called in English the tufted-duck; but, by the generality of authors, capo negro, it's Venetian name.

COLYMBUS. The name of a distinct genus of birds in the Linnæan system, of the order of anseres. See DIVER.

COMB-BIRD. A gallinaceous bird, of the size of the turkey-cock, found near the Rivers Senegal and Gambia in Africa; the plumage of which is grey, streaked with black and white; and the wings are very large, but seldom used in flight. This bird has a very solemn and stately walk, holding it's head erect, which is covered with a kind of soft hair about four inches long, depending on each side, and curled at the points with the greatest regularity and beauty. It's tail, however, is it's principal ornament; the upper part of it being as black as jet and very brilliant, and the under as white as ivory. Of the feathers of the Comb-Bird the negroes make elegant fans.

COMBER. A Cornish fish of a very slender shape. The dorsal fin has twenty spiny and eleven soft rays, the pectoral fourteen, the ventral five, and the anal three spiny and seven soft; and the tail is rounded. The back, fins, and tail, are red; the belly is yellow; and beneath the lateral line there runs a parallel, smooth, even stripe, from the gills to the tail, of a silvery hue.

COMFONES. An appellation given to a species of worms with which children in Misnia, and some other countries, are dreadfully afflicted; and of which Hoffman, in his treatise of endemical diseases, gives the following account. 'Children in the country are frequently seized with a sort of tabes, which so wastes their flesh that they appear mere skeletons. The common people generally believe these children to be under the influence of witchcraft; but such as have accurately examined into the nature of the malady, have discovered that it originates from certain worms, resembling black

hairs

hairs or cords, lodged under the skin. When the skin is rubbed with honey in a bath, or any warm place, these vermin will make their appearance; but, when it is contracted by cold, they keep concealed within.

COMPITA. A name by which some naturalists have called the colymbus major, or fisanelle, the great Venetian diver.

CONCHA. A genus of bivalve shells, containing a tethys. This genus, which is very comprehensive, includes the oyster, chama, muscle, heart-shell, pecten, solen, &c.

CONCHA FORTIFICATA. A name given by some authors to the genus of shells called murex by others.

CONCHA GLOBOSA. A large genus of shells called dolium by the generality of authors.

CONCHA SPECTRORUM. A species of voluta, so called from some strange figures delineated on its surface, representing caricaturas of terrible phantoms. It is a very elegant shell, and of a moderate size; the ground is white; and the figures, which are reddish, form three large and broad bands, which surround the shell at top and bottom, and in the centre: and between these there are several series of small spots. This shell is very rarely met with, and highly esteemed.

CONCHA VENERIS. A name expressive of several species of the genus. The shell is univalve and wreathed, and has a small longitudinal and denticulated chink or aperture. It is also called Concha Porcellana, from its aperture's resembling in some measure the mouth of a hog; and Concha Erythræa, from its being found in the Red Sea, near Erythræum. It appears that the ancients used the inclosed fish by way of aliment; and Mundius asserts, that it possesses a provocative quality. The shell itself, pulverized, has been deemed efficacious in several complaints; but apothecaries generally substitute cockles in its stead, which are imagined to possess nearly the same specific virtues.

CONCHÆ ANOMIÆ. A genus of shell-fish principally found in a fossil state. See ANOMIÆ CONCHÆ.

CONCHÆ MARGARITIFERÆ. An appellation sometimes given to the mytuli, which produce pearls. See MUSCULÆ.

CONDOMA. An anomalous creature of the goat kind, so called by Buffon. It is supposed to be equal in size to the largest stag, but has hollow horns like those of the goat class, with varied flexures resembling those of the antelope: these are above three feet long; and, at their extremities, about two feet asunder. Along the back of the animal there runs a white list, which terminates at the insertion of the tail; and another of the same colour crosses this list at the bottom of the neck, which it entirely surrounds. Two more rings of the same kind encircle the body; one behind the fore legs, and the other running parallel to it before the hinder. The colour of the rest of the body is greyish, except the belly, which is white. The creature has also a long grey beard; and its legs, though long, are well proportioned.

CONDOR. Naturalists are divided in their opinions, whether this vast bird, which is a native of South America, should be referred to the eagle or the vulture tribe. Its astonishing strength and capacity might naturally enough plead for its ranking among the former; but the boldness of its

head and neck might also be conceived to sink it to the latter. It is evident, however, that if magnitude and strength, combined with rapidity of flight and rapacity of disposition, deserve pre-eminence, no bird in the world can be placed in competition with the Condor. It possesses, in a much greater degree than the eagle, all those qualities which render it formidable, not only to the feathered kind, but also to quadrupeds, and even to man. Several authors assert, that the expansion of the wings of this creature is eighteen feet. The beak is so strong as to pierce through the body of a cow; and two of these birds will finish an ox at a single repast. The Condor is by no means terrified at the approach of any of the human form; however, through the benignity of Providence, there are but few of the species; for, were they at all numerous, every order of animals would probably wage an unsuccessful contest against them. The Indians assure us, that one of these enormous birds will carry off a deer, or a young calf, in its talons, with the same facility that an eagle does a hare or a rabbit; that their sight is very piercing, and their appearance terrible; that as they require a very large space for the extension of their wings, they seldom frequent forests; but that they are much attached to the sea-shore, and the banks of rivers, whither they descend from their aerial nests on the summits of the highest mountains. The most modern accounts, however, inform us, that these formidable birds frequent the sea-coasts only at certain seasons, namely, when their prey happens to fail them on the land; and that they then feed on dead fish, and such other nutritious substances as the waves happen to throw on the beach.

Condamine has frequently observed these birds in several parts of the mountains of Quito, in Spanish America, hovering over a flock of sheep, and probably meditating their destruction. Indeed, the Spaniards are ever apprehensive lest these rapacious animals should prey on their children; and it is said that the Americans frequently hold out to one or other of them, as a lure, the figure of a child, composed of a very glutinous clay; on which it descends with excessive rapidity, and strikes its pounces so deeply into it, that it becomes immediately entangled.

Mr. Steary, (the master of a ship) as he navigated the coasts of Chili, in thirty-three degrees of south latitude, observed one of these birds sitting on a high cliff near the shore, which some of the ship's company shot at with a ball, and killed. Its wings, when extended, measured sixteen feet, and one of the feathers, which was presented by the captain to Sir Hans Sloane, and is deposited in the British Museum, measures two feet four inches in length; and, in the largest part, is an inch and a half in circumference.

The only circumstantial account, however, of this amazing bird, is given us by P. Beaulieu, who describes it in the following accurate manner. "In the valley of Ilo, in Peru, I discovered a Condor perched on a high rock before me: I approached within musquet-shot, and fired; but as my piece was only charged with swan-shot, the lead was not able sufficiently to penetrate the bird's feathers. I perceived, however, by its manner of flying, that it was wounded; and it was with apparent ease that it reached another rock, about five hundred yards distant, on the sea shore. I therefore fired again with ball, and hit the bird under the

which made it mine. I accordingly ran up to seize it; but even in death it was terrible, and defended itself on it's back, with it's claws extended against me, so that I could scarcely devise the means of seizing it with security. Had it not been mortally wounded, I might have found this a dangerous enterprize; but having at last dragged it down from the rock, with the assistance of a seaman, I carried it to my tent, to make a coloured drawing.

The wings of this bird, which I measured very exactly, were twelve feet three inches English from tip to tip. The great feathers were about two feet four inches long, of a beautiful shining black colour. The thickness of the beak was proportionable to the rest of the body; the length about four inches; the point hooked downwards, and white at it's extremity, but in every other part black as jet. A short brown-coloured down covered the head; the eyes were black, and surrounded with a circle of reddish brown. The feathers on the neck, breast, and wings, were of a light brown; and those on the back rather darker. The thighs were covered with brown feathers down to the knee; the thigh-bone was ten inches long; the leg five inches; the toes were three before, and one behind; that behind was an inch and a half long, and the claw with which it was armed was black, and occupied one half of the length. The other claws were in the same proportion; and both the legs and toes were covered with black scales; but in the last the scales were larger.

These birds usually keep in the mountains, where they find their prey; they never descend to the sea-shore but in the rainy season; for as they are very sensible of cold, they retire there for additional warmth. Though these mountains they inhabit are situated in the torrid zone, the cold is often extremely severe, and they are covered with snow during a great part of the year.

The small quantity of nourishment which these birds find on the sea-coast, except when the tempest drives in some great fish, obliges them to continue there but a short time. They usually reach the coast at the approach of evening, stay there during the night, and retire to the mountains in the morning.

Some authors are of opinion that the Condor is not confined to America only; and conjecture that the great bird called the roc, described by Arabian writers, and so much exaggerated by fable, is but a species of the Condor. The great bird of Timasser, in the East Indies, which is said to be larger than the eagle, as well as the vulture of Senegal, which carries off children, are probably the same with the bird just described. The inhabitants of Russia, Lapland, and even Switzerland and Germany, are said to have known this animal. A hawk of this kind was shot in France, which was said to be more than eighteen feet across the wings; however, as one of the quills was described as being only four or five times larger than that of the swan, the extent of the wings must certainly have been exaggerated, for a bird of such enormous magnitude would undoubtedly have been furnished with quills of a much superior size. Be this as it may, we have reason to regret that the Condor is scarcely ever known in Europe, as it appears to be one of the most formidable enemies of the human race. Across the deserts of Pachomac, which it chiefly frequents, travellers very rarely venture: those gloomy regions are of themselves sufficient to inspire a degree

of secret horror, exhibiting to view only broken precipices, prowling panthers, forests only vocal with the hissing of serpents, and stupendous mountains rendered still more terrible by the Condor, the only bird that adventures to take up it's residence in those unfrequented climes.

CONEPATE, or CONEPATL. An American animal, of which Buffon makes two species, viz. the Conepate, and the zorille; but as they are both said to resemble the pole-cat in shape, and to be clothed with long fur of a black and white colour, the distinction seems unmarked in nature. The Conepate has five white stripes on a black ground, running longitudinally from the head to the tail. The zorille is rather more distinctly coloured, it's black and white colours being more bright; and it's tail black at it's insertion, and white at it's extremity. But whatever variations there may be either in the figure or colour of these little animals, they all agree in one common affliction, that of being intolerably fetid and loathsome. All animals of the weasel kind are furnished with glands near the anus, from which exudes an odorous matter; in some species yielding a grateful perfume, as in the genet and civet; but, in others, a most noisome and offensive stench, as in the pole-cat and the animal now under consideration. In the Conepate these glands are very large, and furnish a matter sublimed to an amazing degree of putrescence. It is well known that a single grain of musk will diffuse it's scent over a whole house, which will continue for several months without much diminution; but the perfume of civet is insignificant when compared with the strength, duration, and insupportable odour, of this animal. It is usually voided with it's ordure; and, if a single drop happens to touch any part of a person's dress, it is almost impossible to wear it any longer.

This animal, we are informed, ejects it's excrements in order to save itself from it's pursuers; but it is highly probable that this ejection is only the convulsive effect of terror, and that it serves to defend it without any voluntary act of it's own. Certain it is, that it never emits this horrid smell except when enraged or affrighted; for it is often kept tame about the habitations of the American planters, without any sensation of offence. In a state of nature, it frequently steals into farm-yards, and destroys the poultry for the sake of their brains; but it is not prudent either to offend or pursue it on such occasions, as it then calls forth all it's scents, and no human being can possibly approach it. If, however, dogs venture to pursue this animal, it endeavours to escape by climbing up a tree; but, if driven to extremity, it discharges it's intolerable excrements against the hunters, though at a considerable distance; and, should a single particle of this ordure force itself into the eye, the injured person would run the greatest risk of losing his sight for ever. Even the dogs themselves lose much of their ardour when they find this extraordinary battery played off against them; they instantly turn from the pursuit, and leave the animal the undisputed master of the field; nor can any commands induce them to rally. 'In 1749,' says Kalm, 'one of these animals came into the farm where I lived. It was in winter time, during the night; and the dogs which were on the watch, pursued it for some time, till it discharged it's excrements against them. Though I was in bed a considerable way off, I thought I should have been suffocated; and the cows and oxen, by their lowings, uttered how

much they were affected by the stench. About the end of the same year, another of these animals crept into the cellar; but did not exhale the smallest scent, because it was not disturbed. A foolish woman, however, who perceived it at night by the shining of it's eyes, killed it, and at that moment it's stench began to spread. The whole cellar was filled with it to such a degree, that the woman kept her bed for some days after; and all the bread, meat, and provisions, were so infected, that they were obliged to be thrown out of doors.'

Notwithstanding it's intolerable stench, the natives sometimes eat the flesh of this creature, which they assert to be tolerable food; but they previously take care to cut off those glands from whence the foetid matter proceeds.

CONGER. The name of the sea-eel, a species of the *muræna*, found on different parts of the British coasts; and, according to Dr. Borlase, sometimes weighing an hundred pounds.

The Conger differs from the common eel in the superior darkness of it's colour; in it's eyes being much larger in proportion; in having the irides of a bright silvery colour; the lower jaw shorter than the upper; the side-line broad, whitish, and marked with a row of small spots; the edges of the dorsal and anal fins black; in having more bones than the common eel; and lastly, in the vast superiority of it's size, some of them having been caught near Scarborough which measured ten feet and a half in length, and were eighteen inches in circumference towards the middle.

The Conger, though a sea-fish, is supposed to generate like the fresh-water species: innumerable quantities of what is supposed to be their fry come up the Severn about the month of April, preceding the shad-fish, which probably visit that river for the purpose of feeding on them. During their season, they are so very numerous, as to be usually taken in sieves made of hair-cloth, and fixed to long poles. The fisherman, standing on the brink of the river, throws in his net as far as possible, and, drawing it out again almost instantaneously, encloses multitudes of these fish at every effort. They are called elvers, and are reckoned very delicate food.

The Congers are extremely voracious, preying on other fish without exception; and, like all the eel kind, they are extremely fond of carcases, being frequently found lodged in such as are accidentally taken out of the water. In Cornwall, these fish form a considerable article of commerce; great quantities of them being taken on that coast, and exported to Spain and Portugal. They are sometimes caught with hooks and lines; but, as that method is very tedious, fishers generally use what they call bulters, being strong lines, perhaps five hundred feet long, having sixty hooks, each eight feet asunder, baited with pilchards or mackerel, and sunk to the bottom of the sea by means of weights affixed to them. Fishermen are sometimes under great apprehensions from large Congers, which are apt to entwine themselves round their limbs; and they therefore dispatch them as quickly as possible by striking them on their bellies.

When these fish are about to be cured, they are slit, and suspended on drying frames, as they contain a considerable quantity of fat which must always be exuded before they are fit for use. It is said that a Conger of a hundred pounds weight will waste in drying to twenty four pounds, for which

reason the smallest are generally preferred, as being soonest cured.

The ingenious Pennant thinks, that a fishery of Congers would be very beneficial to the inhabitants of the Hebrides; though they might probably undertake it at the first with a degree of repugnancy, on account of their absurd aversion to the eel kind.

CONOPS. A genus of the diptera order of insects, with an extended jointed rostrum, including thirteen species.

CONUS. The Linnæan appellation for shells of the voluta kind. See *VOLUTE*.

COOK. A species of fish sometimes caught in great abundance on the Cornish coasts. It is extremely full of scales, and does not grow to any considerable size. The back is purple and dark blue; the belly is yellow; and the tail is rounded.

COOT. A distinct genus of birds of the order of *grallæ*; the distinguishing characters of which are, that the beak is convex; the thighs are half naked; the feet are furnished with four toes; the nostrils are oblong; and the forehead is entirely naked.

Of these birds Linnæus enumerates seven species.

COOT, COMMON. This bird weighs about twenty-four ounces; it's length, from the tip of the bill to the end of the tail, is sixteen inches, but to the end of the claws twenty-two inches; and the expansion of the wings is two feet and a half. The bill is sharp at the point, and of a white colour, with a small tincture of blue. The feet are blueish, or dusky green; and about the joints of the toes there are semicircular membranes, two on the inner toe, three on the middle, and four on the outer; or, in other words, the three four toes have lateral membranes on each side, scalloped; the interior with two, the middle with three, and the exterior with four scallops. From the bill, almost to the crown of the head, there is an excrescence, or fleshy lobe, destitute of feathers, soft, smooth, and round; on which account this bird is by some called the bald Coot. The head and body are entirely black; the breast and belly are of a lead-colour; and the shape resembles that of a moor-hen.

This bird is generally seen hovering over large streams and rushy margined lakes; where it makes it's nest of such weeds as are supplied by the water, laying them among the reeds, floating on the surface, and rising and falling with the water. This nest is supported by the reeds among which it is built, so that it is seldom washed into the middle of the stream; but, when this accident happens, the bird still maintains her station like a mariner in a boat, and, by the assistance of her legs, steers her treasure into the nearest place of security. She generally lays five or six large eggs, of a dirty whitish hue, sprinkled over with minute deep rust-colour spots. Her young, when just hatched, are very deformed, and their heads are covered with a coarse red down. In winter these birds frequently resort to the fens, and near Southampton in particular the water sometimes appears as if entirely covered with them, so that they are often exposed to sale in that market.

COOT, LARGE. This bird entirely resembles the former, except in it's superior size and the exquisite blackness of it's plumage. It is found in Scotland; and also in some English counties, particularly in Lancashire.

C O R

COOT OF HUDSON'S BAY. The extremity of the upper mandible of this bird is a little crooked; the neck is partly of a fleshy colour; the head is cinereous; the body is brown above, and white below; there is a white spot on each wing; and the legs are brown.

COPROPHAGOS. The appellation given by many authors to the common yellowish-coloured fly found on human excrements. There are various species seen on the ordure of different animals; and they are thence called merdivoræ.

COQUALLIN. A beautiful animal of the squirrel kind, very remarkable for the variety of its colours. Its belly is of a bright yellow; its head and body are variegated with white, black, brown, and orange; and it is destitute of any tuft at the extremity of its ears. This animal, however, seems incapable of ascending trees like the rest of its class.

COR MARINUM. The name of a class of echini marini; the characters of which are, that the anus is placed on the side of that point of the shell which appears as if cut off; and that the mouth, which has two lips, is placed in the third region of the axis of the base.

COR VENERIS. An appellation given by conchologists to a very elegant species of the cordiformis, or heart-shell, which approaches nearer in shape to a real heart than the bucardium, or any other shell of this genus. There are only three known species of the Cor Veneris; namely, the denticulated one, with very elegant rose-coloured spots; the white boat-shell, furrowed internally; and the little rose-coloured kind; but they are all extremely elegant and valuable shells.

CORACINUS. A fish caught in the Mediterranean sea, called by some naturalists skæna; and by Aldrovandus and Salvian, umbra. Its colour resembles that of the common tench, but it is shaped somewhat like the perch. Its scales are small; its mouth is of a moderate size, but well furnished with teeth; and its tail, when extended, is of a roundish figure. The extremities of the rays or nerves of the tail-fin are black; and the other fins are also of that colour.

CORACIUS. A Linnæan term for the pica, or pye. In that great naturalist's system, this bird makes a distinct genus; the distinguishing character of which is, that the inner tail-feathers grow gradually longer and longer.

This bird likewise obtains the name of pyrrhocorax; and, in English, is called the Cornish chough. It is shaped like the jack-daw, but rather resembles the common crow in its size; and the beak is long, red, and somewhat incurved at the point. It frequents rocks and ruined buildings about the sea-shores; and is found about the high cliffs all along the western shores of England. Its voice is very similar to that of the jack-daw, but hoarser and louder.

CORAX PISCIS, or CROW FISH. An animal of the cuculus kind, very much resembling the yellow fish in its shape. The bones which support the gills of this fish all terminate in sharp points. See FLYING-FISH.

CORBELE. The name of a curious species of echinodermata. It is of the larger kind; and deeply furrowed, both longitudinally and transversely, forming a kind of reticulated surface, in imitation of the cork.

CORCULUS. An appellation given by some authors to a small species of cordiformis, or heart-shell, of a rose-colour.

C O R

CORDYLA, or CORDYLUS. A name by which some naturalists express the thynnus, or tunny-fish, while in its adolescent state.

CORDYLUS. A species of lizard, called also uromastyx and caudiverba. It is larger than the green lizard; and the tail is rounded and divided into a number of circles covered with scales, which coat them over like the tiling of a house.

COREGONUS. A genus of fishes of the malacopterygious or soft-finned kind; the characters of which are these: the branchiostege membrane on each side contains seven, eight, nine, or ten bones; the pinna dorsi is placed nearer the snout than the ventral fins; and the teeth are so minute as to be scarcely perceptible in several of this class.

Artedi enumerates four species of this genus. The term Coregonus is composed of Kore, the Pupil of the Eye; and Gonias, an Angle or Corner; and is applied to this genus of fishes from the singular structure of this part of the eye, the pupil running out into an acute angular corner in the anterior part in all the species.

CORSETT. A large East Indian fish of the tunny kind, supposed by many to be the same with the common tunny. It grows to the length of six or seven feet; the eyes are large, and their irides yellow; the tail is broad and forked, and of a yellowish-green colour; the belly-fins are yellowish; and the belly itself is a fine bright glossy blue, with a silvery cast. This fish, which is generally caught with hooks, is esteemed very delicious.

CORMORANT. A large sea-bird of the order of anseres, called by authors corvus aquaticus, or the sea-raven. This bird is about three feet four inches in length; the extent of its wings is four feet two; and its weight exceeds seven pounds. The bill is dusky, and five inches in length; the base of the lower mandible is overspread with a naked yellowish covering, which extends under the skin, and forms a kind of pouch; and a loose skin of the same colour reaches from the upper mandible round the eyes and angles of the mouth. The head and chin are a dull black; but under the chin of the male the feathers are white, and the head in that sex is adorned with a short, loose, pendent crest. The coverts of the wings, the scapulars, and the back, are of a deep green, edged with black, and glossed with blue; the quill-feathers and the tail are dusky; the breast and belly are black; and in the midst of the tail there is frequently a bed of white. The legs are strong, short, and black, the middle claw being serrated on the inside; and the irides are of a light ash-colour.

Notwithstanding the apparent heaviness of the structure of Cormorants, few birds are more powerfully predaceous. As soon as winter approaches, they are seen dispersed along the sea shores, entering the mouths of fresh-water rivers, and threatening destruction to all the finny tribe. They are uncommonly voracious, and their digestion is so astonishingly rapid, that their appetites seem to be always craving, yet never to be satisfied. This gnawing sensation, however, may probably be stimulated by the great quantities of small worms lodged in their intestines, and which their unceasing pluttony contributes to engender.

Thus formed with the grossest appetites, this bird, even in its molt he-dread state, tends forth a most rank and offensive smell, by far more fetid than putrid flesh. Its form is disagreeable, its voice is hoarse and croaking, and all its qualities are obnoxious. It cannot then surely appear strange, that

that Milton should make Satan personate this bird, when he sends him on the most infernal of all purposes, namely, to survey with pain the beauties of Paradise, and to sit devising death on the tree of life. It has been observed by some critics of this sublime poet, that perching a water-fowl on a tree implied no great acquaintance with the history of nature; however, it must be remarked, in vindication of Milton, that Aristotle expressly asserts of the Cormorant, that it is the only aquatic fowl which at any time either sits or roosts on trees.

This bird seems to be of a multiform nature; and, wherever fish are to be found, it watches their migrations. It is seen as well on land as at sea; it feeds on fresh-water as well as sea-fish; it generally builds its nest in the cliffs of rocks; and preys not only by day, but also during the night.

The indefatigable industry and great dexterity of the Cormorant in catching fish, was probably the only motive which induced some nations to keep this bird in a tame state; and Willughby assures us, that it was once bred by the English for that very purpose. The description of their manner of fishing is thus delivered by Faber. 'When they carry them out of the rooms where they are kept, to the fish-pools, they hoodwink them, that they may not be frightened by the way. When they are come to the rivers, they take off their hoods; and having tied leather thongs round the lower part of their necks, that they may not swallow the fish they catch, they throw them into the river. They presently dive under water, and there for a long time pursue the fish with wonderful swiftness; and when they have caught them, rise to the surface of the water, and pressing the fishes lightly with their bills, swallow them, till each bird hath devoured five or six fishes after this manner. Then their keepers call them to the fist, to which they readily fly; and, one after another, vomit up all their fish, only a little bruised with the first nip given in catching them. When they have done fishing, setting the birds on some high place, they loose the strings from their necks, leaving the passage to the stomach free and open; and for their reward they throw them a part of the prey, to each one or two fishes, which they will catch most dextrously as they are falling in the air.'

At present, the Cormorant is trained up in every part of China, for the purposes of piscation, where lakes and canals are very numerous. 'To this end,' says La Compte, 'they are educated as men rear up spaniels or hawks; and one man can easily manage a hundred. The fisher carries them out into the lake, perched on the gunnel of his boat, where they continue tranquil, expecting his orders with patient attention. When arrived at the proper place, at the first signal given, each flies a different way to fulfil the task assigned it. It is very pleasant, on this occasion, to behold with what sagacity they portion out the lake or the canal where they are stationed on duty. They hunt about, they plunge, they rise a hundred times to the surface, till they have at last found their prey; they then seize it in the middle with their beaks, and carry it regularly to their master. When the fish is too large, they then give each other mutual assistance; one seizes it by the head, the other by the tail, and in this manner they carry it conjointly to the boat. There the boat-man stretches out one of his long oars, on which they perch; and, being freed from their burden, they again fly off to pursue their sport. When they are wearied, the proprietor suffers them to enjoy a short interval of rest; but they are never

fed till their task is accomplished. In this manner they supply a very plentiful table; but still their natural gluttony cannot be reclaimed by education. They have always, while they fish, a string fastened round their throats, to prevent them from devouring their prey; as otherwise they would at once satiate themselves, and discontinue their pursuit.'

The Cormorant is the most expert fisher of all birds, and is generally on the wing; and the astonishing celerity with which it descends from immense heights in the air in order to dive for its prey, affords matter of agreeable amusement to a person stationed on an adjacent cliff.

This large bird is seldom seen in the air, except at those times when it perceives fish almost immediately under it; and even then they must be pretty near the surface of the water before it will venture to dart on them: if the fish are at a depth beyond what the impetus of the Cormorant's flight renders it capable of diving to, they certainly escape; for this animal is by no means capable of moving so fast under water as a fish can swim. It seldom, however, makes an unsuccessful attack; and it is often seen rising heavily with a fish larger than it can conveniently devour.

The Kamtschadales adopt a singular method of catching Cormorants. They fasten a thick iron or wooden hook to a long rope or strap; bait the hook with a whole fish, the point of the hook coming out near the back fin; and then throw it into the sea. This lure the Cormorants observing, gather about it in flocks, quarrel for it, and the strongest swallows it: the bird, thus entangled, is drawn on shore by the natives; who construct needle-cases and combs of the bones of its wings.

CORNET. A name given by some French writers to a genus of shells, called by others cuculli, and by the generality of naturalists voluta.

CORNUTA. An appellation given by Gesner, and some others, to the fish called also *lyra*, and *lyra altera*. It is of the *trigla* kind, and is distinguished by Artedi under the name of the *trigla* with many cirri and an octagonal body.

CORNUTUS PISCIS. A name given by Ray to an East Indian fish, called *hoorn visch* by the Dutch. It has a horn of a very singular construction on the back part of its head, or the beginning of its back; and two others on its belly, which are very crooked and brittle, and seem to partake of the nature of spines, which in some fish are placed before their neck and belly-fins. A wound inflicted by one of these fish is reckoned dangerous; and is generally cured with much difficulty, especially if any part of the horn is broke off, which, from its natural brittleness, is usually the case.

COROCORO. A Brazilian fish somewhat resembling the *coracinus* of the Mediterranean. It has a sinus in the back, in which it can bury its fins at pleasure.

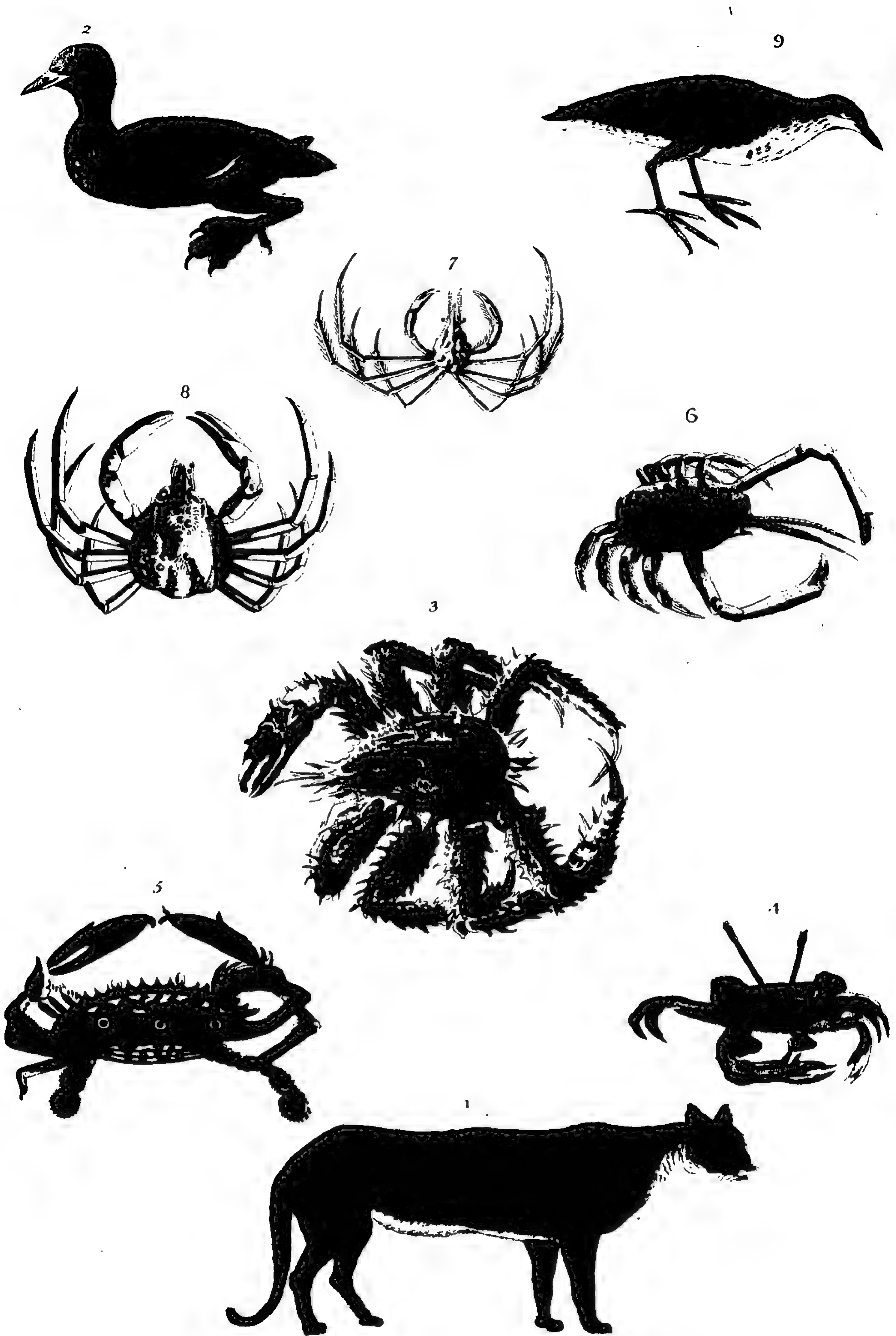
CORONA ÆTHIOPICA. The name of a sea-shell of the *dolium* or *concha globosa* kind.

CORONA IMPERIALIS. A kind of *voluta*, which differs from other shells of that family in having its head adorned with a number of points, which form a sort of crown.

There are four species of this shell in the cabinets of conchologists.

CORVO. An appellation sometimes given to the *umbra* or *chromis* of authors; a large fish commonly caught in the Mediterranean seas, and which, while young, is brought to the markets of Italy.

CORVUS.



1. COUGAR 2. COOT. 3. HORRID CRAB 4. INDIAN LAND CRAB 5. INDIAN SEA CRAB 6. CLAWED CRAB. 7. SLENDER LEGGED CRAB 8. SPIDER CRAB 9. CRANE.

C O R

CORVUS. A distinct genus of birds of the order of picæ, in the Linnæan system; the distinguishing characters of which are, that the bill is sharp and convex; that the nostrils are covered with recumbent bristles; that the tongue is cartilaginous and bifid; and that the feet are formed for walking. Of this genus, which includes nineteen species, are the crow, the raven, the jack-daw, &c.

Corvus is likewise a name given by Paulus Jovius to the faber or doree.

CORVUS AQUATICUS, the Pelicanus Carbo of Linnæus. A name given by authors to the cormorant, or corvorant, on account of it's voracious appetite, which originates from a great number of small worms lodged in it's stomach and intestines, and causing a very sudden digestion. See CORMORANT.

Corvus Aquaticus is also a name given to the acacotl, a very beautiful Mexican bird, of a lucid greenish, blackish, and purplish hue. It feeds on fish, from which circumstance it's flesh contracts a very rank and unpleasant taste.

CORVUS AQUATICUS MINOR. A name by which Ray has very properly denominated a bird common on our northern coasts, and there called the shagge. It seems to be a genuine species of the cormorant.

CORVUS CORNUTUS. An appellation given by some authors to the Indian raven with a corneous beak, more commonly called the rhinoceros-bird.

CORVUS FLUVIATILIS. A very remarkable bird peculiar to the Philippine Islands, resembling the common raven by being of the amphibious kind; and called by the natives cassili, or colocolo.

CORVUS INDICUS. A bird of the raven kind, very common in the Molucca islands. It is of a considerable magnitude, and armed with a large beak and very strong claws. It is not carnivorous, but is very destructive to the fruit of the nutmeg-tree. It's flesh, which is very delicate, partakes greatly of the aromatic flavour of it's food.

CORVUS SYLVATICUS. A bird described by Gesner, and supposed by Willughby to be the same with the coracias, or pyrochorax; but, when minutely examined, it differs essentially from that bird in size, as well as in having a crest on it's head. Gesner says that the Corvus Sylvaticus is of the size of the common hen. It appears at a distance of a deep black; but, when viewed nearer, and in the sunshine, of a fine glossy green. It's tail is short; and it's toes are very long. It feeds on frogs, fish, and other small animals; and builds it's nest in the ruins of old buildings, where it lays two or three eggs. It flies very high; and, when young, is accounted delicate food.

CORVUS PISCIS. A river-fish of the chub kind, common in Italy and some parts of Germany; called by Gesner capito fluviatilis rapax; and, by the common people, noppe. It seldom exceeds six or seven pounds in weight; but is extremely rapacious, and pursues it's prey with such eagerness, that it frequently strands both itself and them. It is common at all seasons of the year, but never in any great plenty; and it's flesh is esteemed very palatable.

CORYPHTNA. A genus of fish of the mactropterygious kind, and of the thoracic order in the Linnæan system; the distinguishing characters of which are these: the branchiostegæ membrane contains five bones on each side, exclusive of two

C O U

others which lie under the bony coverings of the gills, and are therefore not visible: the fins are seven in number, and one on the back reaches from the top of the head to the tail; the head terminates in a very obtuse form, or, as it were, perpendicularly declivious from the vertex to the mouth; and the head and body are both somewhat compressed.

Linnæus enumerates twelve species of this genus, and Artedi three.

COTATUA. A Philippine name for a species of parrot, called also calangay. The body is entirely white; and on the head there is a crest of feathers. It is of the size of a common pigeon.

COTATUA MAJOR. A very beautiful species of parrot common in the Philippine islands. It is about the size of a common hen; and of a most delicate white colour, except the beak and legs, which are black. This bird is with great facility taught to imitate the human voice, and articulates more distinctly than any other of the parrot class.

COITUS. A genus of the acanthopterygious fishes; the characters of which are these: the branchiostegæ membrane on each side contains six very distinct bones; the head is broader than the body, depressed, and prickly; there are two dorsal fins, the foremost containing several flexile prickles; the ventral fins are small; and the skin of the whole fish is smooth, and free from scales. There are three species of this genus; one of which is the small fish known by the name of the miller's thumb.

COU DOU, or CU-DU. A species of deer met with at the Cape of Good Hope. It is distinguished by the length of it's body, which is disproportionable to it's height; the delicate lightness of it's limbs; the uncommon stateliness and beauty of it's horns, which are smooth, hollow, and beautifully transparent like tortoise-shell; the stripes of white on it's skin; a black corneous substance on it's upper jaw, which supplies the place of teeth; a stripe of white hair passing from the middle of the horns to the tail; and a tuft of hair reaching from the neck to the breast.

There are also animals of this kind both in Asia and America, though they differ from each other in a few particulars.

COUGAR. This animal is sometimes called the red tiger, but is extremely different from the tiger of the east. It is a native of the continent of America, from Canada to Brazil; and in South America it is called puma, and is by far the most formidable and mischievous of all the animals of the new world. In the warmer regions, the Cougar is fierce and ravenous to a very high degree, but in North America it's ferocity is greatly subdued by the rigours of the climate. In South America, where the towns generally border on the forests, these creatures make frequent incursions by night into the very houses, from whence they carry off fowls, dogs, and other domestic animals. The Cougar, however, is both weak and contemptible when compared with the oriental tiger, as being hardly able to contend with any of the human species singly. The negroes and Indians are very dextrous in encountering it; and some of them, even for the sake of it's skin, explore it's retreats. The weapons used in this seemingly dangerous business consist only of a lance two or three yards long, made of a ponderous kind of wood, and having it's point hardened in the fire; and a kind of tomitar about three quarters of a yard in length.

COW

Thus armed, the Indian waits till the Cougar makes an assault on his left-hand, which wields the lance, and is wrapped up in a short baize cloak. Sometimes the animal, aware of its danger, seems to decline the combat; in which case its antagonist endeavours to provoke it by a slight touch of the lance, in order, while he is defending himself, to strike a sure blow. As soon, however, as the creature feels the lance, it grasps it with one of its paws, and with the other strikes at the assailant's arm. It is then that the negro nimbly aims a blow with his scymitar, hitherto concealed in his other hand, and hamstringing the animal, which instantly draws back, but being enraged, as suddenly returns to the charge. However, on receiving another stroke, it is totally deprived of the power of motion; and the Indian, after dispatching it without molestation, strips off its skin, and cuts off its head, with which he returns to his companions as trophies of his prowess.

But though man in general prevails over this ferocious creature, it often successfully attacks the crocodile; and, indeed, is the only Transatlantic animal which is not afraid of the contest. When the tiger, impelled by thirst, which it seems incessantly to feel, approaches a river for the purpose of drinking, the crocodile, which indiscriminately preys on every creature, lifts its head above water, in order to seize it; but the Cougar, not less rapacious than itself, and unacquainted with the power of the enemy, boldly ventures to seize it, and plunges its claws into its eyes, the only vulnerable part. On this the crocodile instantly dives under water; and, as the tiger will sooner die than relinquish its hold, it of course descends with its antagonist. There the combat continues for some time; namely, till the Cougar either escapes from its disabled adversary, as is sometimes the case, or is drowned.

In Guiana, Cougars are extremely numerous; and, when the French first settled at Cayenne, these animals proved a dreadful scourge to the infant colony; but by degrees they were repulsed and destroyed, and are now no longer found in the vicinity of that place. In Brazil, Paraguay, and the country of the Amazons, they are frequently seen climbing up trees, either in quest of prey, or to avoid their pursuers. Like all other animals of the cat kind, they are terrified at the sight of fire; and seldom venture near it, as they suspect their enemies to be always in its vicinity, and their nocturnal eyes are dazzled by its brightness.

The fur of the Cougar is soft, and much esteemed by the Indians, who wrap themselves in it during the winter months. The back, neck, rump, and sides, of this animal, are of a brownish red, mixed with dusky hairs; the belly and claws are whitish; and the teeth are of a vast size. It purrs like a cat; and its tail is above two feet and a half long.

From the nature and description of this animal, it might naturally enough be supposed that its flesh is improper for food; nevertheless, there are several accounts which alledge the contrary, and assert, that it is even superior to mutton. However, what Des Marchais observes seems to be most consonant to truth; namely, that the skin is the most valuable part of the animal, and that the flesh is generally lean and rank.

COUTER-NFB, or **COUNTER-NFB.** An appellation given in some parts of England to the *anas arctica* Clusii. See Duck.

COW. A well-known animal, the distinguish-

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ing characteristics of which are, that there are eight cutting teeth in the lower jaw, and none in the upper; that the skin along the lower side of the neck is pendulous; and that the horns bend out laterally.

Of all ruminating animals, or those which chew the cud, the Cow kind deserves the first rank both for beauty and utility. The horse is more properly an animal which falls to the lot of the rich; sheep are chiefly gregarious, and require attendance; but the Cow is more particularly the poor man's blessing, and equally constitutes his riches and support. Many of the peasantry have no other possession than a cow; and even of those advantages which are derived from this useful creature, the poor are but the nominal possessors. Its flesh they must not presume to taste, since their whole fortune would then at once be lost; its young they are obliged to fatten for sale, as a luxury to which they can have no pretensions; and its very milk is converted into butter and cheese for the tables of their masters; while the only share they derive from their possession, is the refuse of the milk, and the choice of their market.

In those countries, however, where some regard is paid to the natural rights of mankind, this excellent animal is of more general advantage. In Poland, Germany, and Switzerland, every peasant keeps two or three Cows, not for the benefit of his master, but the support of his family. The meanest hind in those countries can kill one Cow for his own table, which he salts and hangs up, and thus preserves a delicacy through the revolving year. There is scarcely a cottage in those countries which is not adorned with this mark of hospitality; a piece of beef suspended there is considered as elegant furniture, and argues the possessor's opulence and ease. But in Britain, where we triumph in imaginary liberty, yet submit to every evil of monopoly and extortion, the poor peasantry seldom have it in their power to purchase meat; and even butter is considered as an article of extravagance.

However, the climate, as well as the pasture, of Great Britain, is excellently adapted to the moderate nature of the Cow; and the verdure and fertility of our plains are perfectly suited to its manner of feeding; for, being destitute of the superior fore-teeth, it loves to graze in high and rich pastures. It does not seem to be very anxious as to the quality of its food, provided it has always an abundant supply; and makes no particular discrimination in the choice of its herbage, but eats without ceremony whatever comes in its way. For this reason, in our English pastures, where the grass is rather high and flourishing, than succulent and nutritious, the Cow thrives admirably; and there is no part of Europe in which this animal grows larger, yields more milk, and fattens sooner.

In a course of years, the horse and the sheep are known to impoverish the soil; but, in that where the Cow has been bred, the pasture acquires a finer surface, and every year becomes more beautiful and level: for the horse being furnished with fore-teeth in his upper jaw, nips the grass closely, and selects that which is the most delicate and tender; the sheep also, though with respect to its teeth formed like the Cow, only bites the most succulent parts of the herbage. These animals therefore cut the finer grass too closely, and suffer the high weeds and ranker grass to vegetate and over-run the pastures, but the Cow being obliged to feed on

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the tallest vegetables, eats them all down, and thus levels the surface of the grafs.

The age of the Cow is known by it's teeth and horns. It is furnished with eight cutting teeth in the lower jaw; the two middlemost of which drop out at the age of ten months, and are replaced by others which are broader, but not so white: at the age of sixteen months the two next milk-white teeth disappear, and others succeed them; and thus, at the end of every six months, the animal loses and gains, till, at the age of three years, all the cutting teeth are renewed, and then they are long, regular, and pretty white. But as the creature advances in years, the teeth grow black and irregular; their inequalities become smoother, and consequently the animal chews it's food with more difficulty. Thus the Cow often declines from this single cause; for as it requires a great deal to support life, and as the smoothness of it's teeth renders the difficulty of chewing very great, a sufficient quantity of food cannot be supplied to the stomach; in which case the poor animal droops in the midst of plenty, is gradually more and more emaciated, and at length expires.

The horns are likewise another, as well as a more unerring method, of determining the age of the Cow. At three years of age it sheds it's horns, and new ones spring up in their places, which are afterwards un deciduous; at four, it has small pointed, smooth horns; and, at five, they become larger, and are marked round with the former year's growth. Thus, while the animal continues to live, it's horns also continue to lengthen, and every year a new ring is added to their bases; so that, by allowing three years before their appearance, and then reckoning the number of annulations, the creature's age may be exactly known.

The English breed of Cows has been so greatly improved by a foreign mixture, that we cannot with any degree of certainty point out the original kind in these islands. Those which may be supposed to have been purely British, are much smaller than those on the northern parts of the continent of Europe. In the Highlands of Scotland, the cattle are extremely small; and many of them, males as well as females, are destitute of horns. The Welch rums are considerably larger; and the Cornish black cattle are about the size of the latter. The large species now propagated in most parts of England, are either entirely foreign, or our own breed improved by a cross with the foreign kind. The Lincolnshire Cows derive their descent from the Holstein breed; and the large horned cattle which are bred in some counties of England, were imported originally from Poland. Poland was once famous for a wild breed of these animals, but which no longer exist; and this nation may justly boast of having fewer wild animals than any kingdom of Europe. Cultivation and domestication are sure to banish them wherever they are found, and every addition which a country receives from art diminishes the number of those animals which are only adapted to a state of nature.

The Cow seems more liable to changes from it's situation and climate, than any other quadruped. In the different parts of this narrow island, we can easily observe the great varieties produced among these animals by the richness or poverty of the soil. In some, they grow to an astonishing bulk; and, in others, they are proportionably diminutive. The breed of the Isle of Man, as well as of most parts of Scot-

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land, is in general considerably less than that of either England or Ireland: they are also differently formed, the dewlap being much smaller, and having more of the neck of the ewe. A few years since, this circumstance was considered as a deformity in cattle; and the Cow was chosen, according to Virgil's direction, with a large dewlap; however, it seems to be at present the universally received opinion, that the Cow wants in udder what it has in neck; and the larger the dewlap, the smaller the quantity of it's milk. Graziers therefore endeavour to blend the two breeds, the large Holstein with the small Northern; and from this union is produced that fine milch breed which excels the cattle of every other quarter of the globe.

In short, in almost every part of the world, the Cow is found either large or small, in proportion to the richness or poverty of it's food. Thus Africa is remarkable for the largest and smallest cattle of this kind; as is also India, Poland, Switzerland, and several other parts of Europe. Among the Fluth Tartars, where the pastures are remarkably rich and nourishing, the Cow grows to such an amazing size, that a tall man can hardly reach the tip of it's shoulder: in France, on the contrary, where this animal is stinted in it's food, and driven from the most flourishing pastures, it greatly degenerates, and is neither valuable for it's milk or it's flesh. The variations, however, in the size of this animal, are less remarkable than those of it's form, it's hair, and it's horns: in many, indeed, these variations are so extraordinary, that they have been considered as different kinds of creatures, and names have accordingly been applied to them as a distinct species; when, as Buffon asserts, they are in fact the same. In this manner the urus and the bison have been considered, from the variety in their make, to be distinct in their production; but they are all in fact the descendants of one common stock, possessing that certain mark of unity, namely, their breeding and propagating together. Naturalists therefore have laboured under an obvious error, when on account of the extreme bulk of the urus, or the hump on the back of the bison, they have assigned them different parts in the creation, and separated a class of animals which were really united. Though the horse and the ass do not differ more in figure than the Cow and the bison, the former are distinct animals, their breed being marked with sterility; while the latter are of the same kind, their breed is fruitful, and a race of creatures is produced in which the hump belonging to the bison in a short time entirely disappears. It is evident therefore, that the differences between the Cow, the urus and the bison, are merely accidental. Nature, which has given horns to some Cows, and denied them to others, may also, in her caprice, have bestowed a hump on the bison, or enlarged the size of the urus.

The Cow is found, in some one or other of it's varieties, in almost every part of the world; and, in short, the variations which are every where so perceptible, as has been previously observed, arise either from climate or food, the cultivation of man, or the caprice of nature. The wild Cow and the tame; the animal peculiar to Europe; and that of Asia, Africa, and America, the bonatus and the aures; the bison and the zebu, are all one and the same: they generate among each other; and, in the course of a few generations, the original discriminations become extinct. Of all animals, therefore, man alone excepted, the Cow seems to be the most

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most extensively propagated; it's nature appears equally capable of the extremes of heat and cold; it inhabits the frozen fields of Iceland, as well as the burning deserts of Lybia; it seems to be an ancient denizen of every climate; and is found domestic and tame in such countries as have been civilized, but savage and wild in those regions which are less populous and refined. In a state of nature, it is capable of defending itself against the most powerful enemy of the forest; and is subordinate to man alone, whose power it has experienced, and of whose aid it seems eventually to stand in need. In a domestic state, it is mild and tractable; and, though incapable of shewing any great degree of attachment to it's feeders, is nevertheless sensible of their caresses, and grateful for their kindness. However wild calves which are taken from their dams may appear in a savage state, either in Africa or Asia, they soon become patient, humble, and familiar; and, while other animals preserve their natural propensities with inflexible perseverance, these in all respects accord with the desires and conveniences of mankind.

Cows usually receive the males from the beginning of April till the end of July, and go nine months with young: but the season of copulation may be altered by human industry; for, by a particular method of management, veal is procured at every season of the year.

In this country, the ox is the only horned animal which applies it's strength to the service of mankind: and it is certain that, in many cases, oxen are preferable in the draught to horses; their food and harness are cheaper; their frame is less delicate and obnoxious to disease or injury; and, when age puts an end to their labour, their flesh is still equally valuable, an old working ox being as good food, and fattening as well, as a young one.

Every part of this animal may be applied to some beneficial purpose; and each has it's particular uses in commerce, manufactures, and medicine. Boots, shoes, and many other conveniences of life, are produced from it's hide. Vellum is made of calves-skins; and gold-beater's skin is formed either of a thin vellum, or the finer parts of the guts of the ox. The hair, mixed with lime, is a very necessary article in building. Of the horns, combs, handles of knives, boxes, buttons, drinking-vessels, and many other useful articles, are made. In medicine, the horns are also used as alexipharmics or antidotes against poison, the plague, or the small pox; and they are said to possess the same virtues as the oriental bezoar. Carpenters glue is made of the chips of the hoofs and the parings of the raw hides. The bones are used by mechanics as a substitute for ivory, by which means they are enabled to sell many neat conveniences at a cheap rate. From the feet is procured an oil which answers many useful purposes; and the bones, when calcined, afford a fit substance for tests, for the use of the refiner in the smelting-trade. The blood is said to be an excellent manure for fruit-trees, and forms the basis of that colour to which we give the name of Prussian blue. Our artificial light is in a great measure derived from the fat and suet of this animal; the gall, liver, spleen, and urine, have their respective uses in the materia medica; and the importance of butter, cheese, and milk, are too obvious to need insisting on.

The flesh of the ox is extremely nutritious, and yields a very strong aliment; and those who live

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chiefly on this food are in general strong, vigorous, and healthy: but it should be tender and well fed, otherwise it proves hard of digestion; however, it is probably at all times better adapted to the laborious and the active, than the sedentary and the indolent. Bull-beef contains a great deal of volatile salt and oil; but being generally hard, tough, and dry, it is therefore seldom used. It is said, indeed, that when a bull is first baited, and then killed, the flesh becomes more proper food; but this practice is in itself so inhuman and barbarous, that it were devoutly to be wished that it was either totally exploded, or at least, from a voluntary refinement of manners, universally relinquished.

The flesh of the Cow is inferior to that of the ox; but if she has been well fed, and is young, the difference is not very easily perceived. Veal is nourishing, well tasted, and easy of digestion; for which reason it is very proper for delicate constitutions, and those who have not opportunities for regular exercise. The fatteners of veal for the London markets suffer the calves to lick salts, chalk, and such other substances, in order to communicate a superior whiteness to their flesh: but what it thereby gains in colour, it certainly loses in flavour; and, though more tempting to the eye, it is unquestionably less grateful to the palate, as well as less wholesome and nutritive.

The following varieties of the Cow kind, properly so called, are the most remarkable.

Cow, WILD. This animal proves to be the urus, the bonafus, and the bison, of the ancients. It is met with, in small numbers, in the marshy forests of Poland, in the Carpathian Mountains, in Lithuania, and near Mount Caucasus in Asia. Some authors have mentioned a species of wild Cow found on the continent of Africa; but ancient and ignorant travellers are little to be relied on, it having long since been discovered that the wild ox of Leo is the same with the gnou, an animal of a very different class. Indeed, the torrid zone forbids a scrutiny into several species, which would, perhaps, afford much satisfaction to an inquisitive naturalist.

Cow, GREAT INDIAN. This variety is of a reddish colour; has short horns bending close to the neck; and a vast lump on the shoulders, which is extremely fat, and esteemed very delicate and rich food: this lump, being merely accidental, disappears, in the course of a few descents, in a mingled breed. The Great Indian Cow is also common in Madagascar, where it grows to an enormous size.

Cow, SMALL INDIAN. This animal, which is very small, has a lump on the shoulders, and horns which project a little forwards. It is the *bos Indicus* of Linnæus, and the zebu of Buffon. In Surat there is a very minute breed, not larger than a dog, which nevertheless has a very fierce look.

Cow, ANYSSINIAN. In this country, and in the isle of Madagascar, a curious variety of the Cow is met with, which has a hump on the back, with horns only attached to the skin, and entirely pendulous.

Cow, LANT. This animal, as described by *Leo Africanus*, has smaller legs and neater horns than the common breed, the hair is white, the hoofs are of a jetty blackness; and of the hide targets are made which are impenetrable by a musket-ball. This species is so amazingly swift, as even to outrun the Barbary horse; that courier which

which can overtake it being usually valued at a thousand ducats, or a hundred camels.

COW, AMERICAN. This variety has a vast bunch on the shoulders; and short black rounded horns, with large intervals between their bases. The fore-parts of the body are thick and strong, but the hinder ones are slender and weak; and the head and hunch are covered with hair of a dull rust-colour, which is at times so very long, as to give the animal a shapeless appearance, and obstruct it's sight. During winter the whole body is cloathed in the same manner; but in summer the hind-part of the body is naked, wrinkled, and dusky. The tail is about a foot long, and naked, except a tuft of black hairs at the extremity. This animal inhabits Mexico, and the interior parts of North America: it is fond of marshy places, and is extremely fierce and dangerous; but, if taken young, is capable of being tamed. It seems to be the same with the bison and other cattle in a wild state, and to be common to Europe and America. See BISON.

COWRIES. A genus of shells of the cyprea class. See CYPREA.

COXOLITLI. A Brazilian bird of the size of the peacock, and of a brownish colour. Though it differs from the jacuperna in some particulars, it seems to be of the same species.

COYOLCOZQUE. An American bird, described by Hernander and Nieremberg as a species of quail or partridge. The colour of it's back is a mixture of white and yellow; it's breast and belly are wholly yellow; it's head and neck are ornamented with spots of black and white; it's eyes are black; and it's legs are yellow. It is very common in many parts of Spanish America, and is esteemed excellent food.

COZCACOAUIHTLI. The Mexican name of a large bird of the eagle kind described by Nieremberg; and called by some *regina aurum*, from the power it possesses of flying against the wind.

CQUILAQUIL. The Philippine name of a kind of parrot common in these islands; and distinguished from the other species by being very large, and entirely of a green colour.

CRAB. A genus of aptera in the class of insects in the Linnæan system, comprehending no less than eighty-seven species; the distinguishing characters of which are, that it has generally eight or ten feet, two of them being clawed; the two eyes are remote, and for the most part pedunculate, elongated, and moveable; the two feelers are clamorous; and the tail is articulated. To this genus belong the Crabs properly so called, crayfish, shrimps, lobsters, &c.

The Crab is found equally in fresh and salt water, and as well on land as in the ocean. It differs essentially from the lobster in it's conformation, but entirely resembles it in it's habits. The body is in general roundish; the back is a little arched; and the tail turns up under it, lying in a cavity designed for that purpose. These fish are of different sizes, some weighing several pounds, and others only a few ounces. The male is distinguished from the female in having a broader tail, like that of the lobster; and it likewise resembles it with respect to the number of it's claws, which are two; and it's legs, which are eight.

As Crabs, however, are found on land as well as in the water, the peculiarities of their situation produce the following difference in their habitudes.

Land-Crabs are found in most of the warmer regions of Europe, and in great abundance in all the tropical climates in Africa and America. They are of various kinds, and endued with different properties: some are salubrious, delicious, and nourishing food; others are poisonous and malignant to a very high degree; some are not above half an inch broad, others are a foot in diameter; some are of a dirty brown colour, and others are mottled in a very beautiful manner.

The coasts of the British isles afford a considerable number of species, the more remarkable of which will be described: but the most extraordinary animals of the kind are the Violet-Crab of the Caribbees, and the Soldier-Crab.

CRAB, VIOLET, OF THE CARIBBEES. This animal resembles two hands cut in the middle, and united together, for each side bears some resemblance to four fingers; and the two nippers or claws represent the thumbs. All the rest of the body is covered with a shell as large as a man's hand, and bunched in the middle; on the fore-part of which there are two oblong eyes, each of the size of a grain of barley, as transparent as crystal, and as hard as horn. A little below these, the mouth is placed, covered with a sort of barbs, under which are two broad sharp teeth, as white as snow, placed not much unlike the blades of a pair of scissors: with these teeth it can easily masticate leaves, fruits, and rotten wood, which constitute it's usual food. However, the principal instruments for cutting, as well as seizing it's food, are it's nippers, which catch such sure hold, that the creature sooner loses it's limbs than it's grasp; and is often seen retreating after having left one of it's claws fixed in it's enemy, which claw will frequently retain it's hold upwards of a minute after the Crab has made it's escape. In fact, this animal loses little by leaving either a leg or an arm, for they soon grow again, and then the creature is seen as perfect as before. This, however, is the least singular part of the history of these animals; and the following circumstances, were they not well authenticated, might not only stagger the belief of an ordinary reader, but bring the veracity of naturalists in question.

They not only live in a kind of orderly societies in their mountainous retreats, but annually descend to the sea-side, in a regular army composed of millions. As they multiply in vast numbers, they generally begin their expedition about the month of April or May; and then sally forth in myriads from the stumps of hollow trees, the cliffs of rocks, and holes dug by themselves beneath the surface of the earth. At such times the whole ground to a considerable distance is so covered with these adventurers, that it is almost impossible to advance a single step without treading on some of them. The sea being the place of their rendezvous, to it they direct their march with the utmost precision, they neither turn to the right nor left, whatever obstacles intervene; and, if they even meet with a house, they attempt to scale the walls, rather than suffer their ranks to be thus broken.

But, though the above be the general order of their route, on other occasions they are obliged to conform to the face of the country; and, if it be intersected by rivers, they then wind along the course of the stream. The procession sets forward from the mountains with all the regularity of an army under the guidance of an experienced general. They are commonly divided into three battalions, of which the foremost consists of the strongest and

boldest males, which march forward like pioneers, in order to clear the route, and oppose threatening dangers: these are often obliged to halt for want of rain, and to take shelter in the most convenient spots, till an alteration of the weather takes place. The main body of the army is composed of females, who never leave the mountains till the rain has set in for some time; and then they descend in regular battalia, formed into columns of fifty paces broad, and three miles deep, and so close, that very little of the ground can be discovered. Three or four days afterwards, the rear-guard follows; a straggling, undisciplined tribe, consisting of a mixture of males and females, neither so robust nor numerous as the two former columns. The night season is chiefly chosen for their march; but, should it happen to rain in the day-time, they do not fail to avail themselves of that circumstance, moving forward with a slow, uniform pace. When the sun shines, so as to warm the surface of the ground, they make a general halt, and patiently wait the cool of the evening. When frightened, they march backward in a disorderly manner, holding up their nippers, with which they frequently lacerate the flesh of their adversaries, and sometimes leave these weapons, as we have already observed, in the wounds inflicted by them. They even try to intimidate their enemies, by clattering their nippers together, as if to threaten those who presume to disturb them. But though they thus make a shew of being formidable to man, they are far from living in amity with each other; for no sooner is one of their number maimed by accident, or worn out with fatigue, than the rest fall on it, devour it on the spot, and then pursue their journey.

After having encountered a thousand dangers, and continued their march sometimes for two or three months, they at length arrive at their destined port, where they prepare to cast their spawn. The foetus, if it may be so called, is yet within their bodies, and not placed under their tails, as is usual in animals of this kind; for these creatures wait till they can have the benefit of sea-water to assist their delivery. For this purpose, they no sooner reach the shore, than they eagerly advance to the water's edge, and suffer the waves to wash their bodies two or three times. This, however, seems only preparatory to their bringing their spawn to maturity; for they presently withdraw to the land, in order to search for a lodging-place; and, in the mean time, their spawn grows larger, is excluded out of their bodies, and sticks to the barbs under their tails; and these protuberances soon become as large as hens eggs, and exactly resemble the roes of herrings. In this advanced state of pregnancy, they once more seek the shore, and shake off their spawn into the water. At this time whole shoals of hungry fish are impatiently waiting for this annual supply; the sea appears discoloured with them for a considerable space; and above two-thirds of the Crabs eggs are immediately devoured by these rapacious invaders. Those eggs, however, which escape them, are hatched under the sand; and in a very short time millions of these little animals are seen to quit the shore, and to advance in slow procession to the mountains.

The old ones having thus discharged the grand duty of irrational nature, set out on their return, but they are now become so very feeble and emaciated, that they can hardly creep along, and even their flesh assumes a different colour. The generality of them, therefore, are obliged to continue

in the flat parts of the country till their strength is recruited, making holes for themselves in the earth, which they cover with leaves and dirt, in order to prevent the admission of air. In these retreats they throw off their old shells, which they leave in a manner entire, the places where they opened on their bellies being unseen. At that time they are quite naked, and almost without motion, for six days together; after which they become so fat, as to be very delicious food; and have under their stomachs four large white stones, which gradually decrease as their shells harden; and, when arrived at perfection, are no longer perceptible. The animals then make their way backward with a slow pace, and generally perform their journey in the space of six weeks.

When the Crab is reinstated in its mountainous retreat, it is almost impossible to dislodge it; for, subsisting only on vegetables, it seldom ventures abroad; and its habitation being in general inaccessible, it remains there during a great part of the season in perfect security; and at those times only, when impelled by the desire of bringing forth its young it is forced to descend into the flat country, does it fall under the power of man. At such seasons the natives wait for the descent of these creatures with eager expectation, and destroy numbers of them; but, disregarding their bodies, they only search for that small quantity of spawn which lies on each side of their stomachs within their shells.

These animals, indeed, are more valuable on their return, after having shed their exuviae; for, being covered with skins resembling soft parchment, almost all their parts, except their stomachs, are edible. They are taken in their holes by means of instruments adapted to that purpose; and are also traced by night, when on their journies, with flambeaux. The instant they are attacked, they throw themselves on their backs, and with their claws pinch their enemies most unmercifully. But dextrous Crab-catchers seize them by their hinder legs, in such a manner that their nippers cannot hurt them, and thus throw them into their bags.

The natives derive considerable advantage from these creatures; and slaves are often entirely subsisted on them. In Jamaica, where they are found in abundance, they are regarded as a very great delicacy. Still, however, the eating of them is attended with some danger; for, even of this kind, many prove poisonous, which quality they are supposed to derive from feeding on the machineel apple; and, whenever they are found under that noxious plant, they are always rejected.

CRAB, SOLDIER. This creature, when divested of its shell, somewhat resembles the lobster. It is usually about four inches long; and has no shell behind, but is covered down to the very tail with a rough skin terminating in a point: it is, however, armed with strong hard nippers before, the only crustaceous parts which it contains. But, what nature has denied this animal, it has taken care to supply by art; and, taking possession of the deserted shell of some other animal, resides in it till its increased size requires a larger covering.

This species is found in the West India islands; and, like the Violet-Crab, annually descends from the mountains to the sea shore, in order to deposit its spawn, and provide itself with a new shell. This seems to be a very active period in the life of this animal, and probably its first care is to provide for

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for its offspring before it attends to its own wants; and, from the number of small shells it is at times seen to examine, it is supposed that it deposits its spawn in them, where it remains in security till the time of exclusion. But, however this may be, the Soldier is by no means unmindful of itself, for, having outgrown its old shell, a part of its naked body is perceptible; and therefore a shell must be found big enough to cover the whole, and yet not so very large as to be unmanageable and unwieldy. These purposes are by no means effected by a slight survey; for the little animal is seen busily perambulating the shore, along that line of pebbles and shells which is formed by the farthest wave; still, however, dragging its old incommodious habitation at its tail, and seemingly unwilling to relinquish it till it has discovered one more preferable. It accordingly stops at one shell, turns it, and passes by; goes on to another, which it surveys, and then disengages its tail from its old habitation, in order to make trial of the new; but should this also prove incommodious, it then quickly returns to its old shell again: and in this manner it continues changing, till at last it suits itself with one light, roomy, and commodious, to which it adheres, though it may sometimes be so very large as to conceal every part of its body.

These animals, however, do not accomplish their respective ends without much difficulty, and sometimes a severe combat; for, when two of them happen to fix on a shell at the same time which seems suitable to each of them, they both endeavour to take possession of it; striking with their claws, and pinching each other, till the weakest is obliged to yield up the object of dispute. On this the victor immediately enters, and parades in his new acquisition backwards and forwards on the strand, in the view of his discomfited antagonist.

The Soldier Crab, when laid hold of, sends forth a feeble cry, and endeavours to seize its invader with its nippers; which being effected, it will sooner die than quit its grasp. The wound thereby inflicted is very painful and difficult of cure; for which reason, and as its flesh is not much esteemed, it is generally permitted to return to its old retreat in the mountains without molestation.

CRAB, WHITE. This is likewise a land Crab, and a native of the Caribbees. It has nearly the same properties as the violet Crab, but grows to such a superior size, that one of them is reckoned worth three of the violet.

CRAB, INDIAN LAND. The body of this animal is of a roundish figure, a little compressed, and about the size of an orange. It has eight legs, each two inches long, with four joints, the lower parts being covered with long hairs; the mouth is large, and hairy on its sides, as well as the rest of the body. Of the great legs or claws, the right is longer than the left considerably less; the right being one and a half inches long and two broad, while the left is scarcely so long by one-third. The eyes are extremely prominent, or sunk, according to the pleasure of the animal; and near the mouth there are two short feelers, which the creature possesses the faculty of extending or concealing.

All Crabs of this sort have the following property, namely, that if they seize any thing with their nippers, they sooner quit their limbs than they do the object; however, as observed in the description of the Violet-Crab, this loss is soon repaired by a regeneration of the part.

CRAB, SEA, EAST INDIAN. This species is about

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a span long, and of a very singular colour, the shell being in general speckled with yellow spots, except where three purple ones appear inclosed in a circle of white. The claws next the body are yellowish, white in the middle, and of a deep purple at the extremities; and the eyes project almost an inch from the head.

CRAB, SOUTH AMERICAN. The natives call this species *Guaia Apara*. It is beautifully variegated, one end of the body being terminated with a circle, and the other with a right line; and it grows to about three inches in breadth, and two and a half in length. The fore-part of the shell is of a dark brown colour, variegated with whitish spots; and the hinder part is of a whitish yellow, adorned with brown streaks running in a longitudinal direction. It has eight roundish feet or claws, with four joints, of a whitish yellow colour; and also two great claws or nippers, each two inches and a half long, and half an inch broad; their upper parts being armed and dentated like the comb of a cock. When swimming, it causes a kind of bubbling in the water, which resembles the effervescence occasioned by fire.

CRAB, PEA. The thorax of this animal is smooth, rounded, and undivided; and the tail is as large as the body, which is commonly about the size of a pea. It inhabits the mussel; and is undeservedly characterized as being poisonous, for the inflation, after feeding on mussels, is wholly constitutional; and for one that receives any injury from eating them, multitudes remain unaffected.

CRAB, LONG-HORNED. This species has a smooth round body, large claws, and very long horns. It is a very minute animal, being less than the Pea-Crab; and is commonly found on the British coasts.

CRAB, COMMON. This class has three indentations on the front, five serrated teeth on each side, ovated claws, and subulated hind-feet. It is of a dirty green colour; and, when boiled, turns red. It lurks under sea-weeds, or burrows in the sand, and is found on all the British shores.

CRAB, PURIFIER. The thorax of this animal has a quintuple dentation on each side; the front is also indented; the body is subcordated; the claws are angulated; and the two last joints of the hind-legs are ovated and ciliated. This species generally inhabits the depths of the sea, where it feeds on dead animals; and is thence called the Purifier, as occasioning the removal of putrid substances.

CRAB, BLACK-CLAWED. The body of this species is smooth; the thorax is crenated; the hind-feet are subulated; and the claws are smooth, with black tips. It frequents rocky coasts; is reckoned very delicious food; and the tips of the claws are used in medicine, as an absorbent of acidities in the stomach and bowels.

CRAB, VELVET. The thorax of this class is quinquedentated; the body is overpread with a short brown velvet-like down; the claws are covered with minute tubercles; and the hind-legs are broadly ovated. It is found on the coasts of the isle of Anglesea.

CRAB, BRISTLY. This species has a hairy thorax, and on each side a slight quintuple dentation; the claws are ovated, somewhat eelinated, and hairy; and the feet are bristly and subulated. It is a small animal of a reddish colour, and lurks under stones on the sea-shore.

CRAB, LARGE-CLAWED. The front of this creature

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creature is tridentated; the thorax is undivided; the claws are very large, depressed, and considerably ciliated on the outside; three of the legs are subulated on each side; the antennæ are very long, and reverted when not in use; and the body is about the size of a horse-bean. It is found on the coasts of the Hebrides.

CRAB, LONG-CLAWED. This species has a bifurcated front; a spine at the corner of each eye, and another on each side of the thorax towards the tail; the body is ovated and smooth; the antennæ are as long as the body; the claws are double the length of the body; and the feet are subulated.

CRAB, HORRID. This class has a projecting bifurcated snout; the body is cordiform; and the claws and legs are covered with long and very sharp spines. This animal, which is pretty large, is found among rocks on the eastern coasts of Scotland; and is also common in Norway.

CRAB, SPIDER. The front of this animal is bifid; the thorax is bristly; the body is cordiform and tuberculated; the claws are long and ovated; and the legs are long, slender, and subulated.

CRAB, SLENDER-LEGGED. This species has a bifid snout; the body is small, tuberculated, and shaped like a heart; the claws are long; and the legs are of a very disproportionate size, slender, and hairy.

CRAB-LICE. A very odious and troublesome species of vermin, which stick so fast in the human skin, that they are with difficulty dislodged. When viewed with a glass, they bear a strong resemblance to the small crab-fish; whence they have obtained their popular name. They are distinguished by some authors under the different appellations of *Pluctulæ*, *Morpiones*, *Petolæ*, and *Pessolæ*; and chiefly infest the arm-pits and privities of those who indulge in promiscuous amours.

These vermin are by some supposed to prognosticate a speedy dissolution to those whom they relinquish without the help of medicine. When touched with a rag wetted in the milk of sublimate, they are at once destroyed.

CRAKE. A bird of the gallinule or rail kind; and supposed by many to be the same with the water-rail, an error originating from a want of due attention to their different characters and natures. The bill of this bird is short, strong, thick, and exactly formed like that of the water-hen; though it never frequents watery places, but is always found among corn, grass, broom, or furze. The feathers on the crown of the head, the hind-part of the neck, and the back, are black edged with bay; the coverts of the wings are of the same colour, but without any spots; the tail is short, and of a deep bay; the belly is white; and the legs are cinereous.

This bird, which is migratory, quits this kingdom before the approach of winter, but has a strong aversion to the trouble of flying. The legs, which are remarkably long for the size of the bird, hang down while it is on the wing; and, in general, it seems rather inclined to trill to swiftness of foot than rapidity of flight. It lays from twelve to twenty eggs, of a dull white colour, marked with a few yellow spots; but, notwithstanding this very great number, the breed is by no means plentiful in England. Its note, which is very singular, resembles the word *Crex*, often repeated.

In Scotland and Ireland, Crakes are very numerous: they arrive there about the middle or end of April, when they are very lean; but, before they leave these islands, they become plump and fat, and generally weigh upwards of eight ounces.

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CRAMP-FISH. The English name of the torpedo, or electric ray; a fish possessing the singular power of benumbing the fingers of those who touch it, even through the medium of a rod.

CRAMPER. An appellation given by some authors to the *brama sexatilis*, or *pagrus Indicus*; a large and broad sea-fish caught among the rocks on the shores of many parts of the East Indies.

CRANE. This bird, in the Linnæan system of zoology, forms a species of the *ardea*, or heron; the characteristic of which is, that the head is cristated, and almost bare of feathers.

Birds of the Crane kind, (which, in an extensive sense, comprehends a very numerous class) being habituated to marshy places, may be known either by the length of their legs, or their scaly coverings: they are in general very thinly feathered half way up their thighs, and all of them above their knees. In most birds of this class the bill is very remarkable; it is generally longer than that of any other bird; and at the point is possessed of extreme sensibility, being furnished with nerves for the better feeling of its food under slime in marshy places where it cannot possibly be discerned. Some of these birds are furnished with every convenience; having long legs for wading, long necks for stooping, and long bills for searching. They lead a life of precarious liberty, in fens and marshes, and on the margins of seas or lakes: they subsist on fish and insects; build their nests in a very simple manner; and are exceeded in cunning and fecundity by almost every other class of animals.

CRANE, COMMON. Various and contradictory are the accounts respecting the size and dimensions of this bird. According to Willughby and Pennant, the Crane is from five to six feet long from the tip of the bill to the tail; while other naturalists assert that it is above five feet high; and some others, that it is even equal in height to a man. Brisson seems to give this bird its real dimensions, when he describes it as something less than the brown stork, which is about three feet high, and four from the tip of the bill to the tail. Still, however, the numerous testimonies of its superior size are not to be totally rejected; and perhaps that bird from which Brisson took his dimensions was one of the smallest kind. According to this author, the Crane is exactly three feet four inches from the tip to the tail, and four feet from the head to the toe. It is slender in proportion to its height, and has a long neck and long legs. The top of the head is covered with black bristles; and the back part of it, which is bald and red, is a sufficient distinction between this and the stork, to which it is very nearly allied in size and conformation. The plumage is ash-coloured; and two large tufts of feathers spring from the pinion of each wing bearing some resemblance to hair, and finely curled at the extremities, which the Crane can erect or depress at pleasure. Gesner informs us that, in his time, these feathers were often set in gold, and worn in the caps of persons of distinction by way of ornament.

Such is the description of a bird concerning which so many fables have been invented and propagated. The Crane is a bird with which all the ancient writers were familiar; and, in depicting it, they have not failed to blend imagination with history. From the policy of these birds, they tell us, we are to conceive an idea of the most perfect republic among mankind; from their tenderness to their aged parents, whom they take care to nourish,

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rish, cherish, and support when flying, we are to learn lessons of filial piety; but particularly, from their conduct in fighting with the pigmies of Ethiopia, we are to receive our maxims in the art of war.

In early times, the history of nature fell to the lot of poets only, and certainly none could describe it better: but it is a part of their province to embellish their descriptions with adscititious ornaments; and, when this captivating science was cultivated by a more cool and sober class of authors, they were obliged to take the accounts of things as they found them; and, in the present instance, fable was handed down to posterity blended with a certain portion of truth.

There is unquestionably some degree of reality in these relations; but they have been greatly exaggerated by fancy. Cranes are certainly very social birds, being seldom seen alone: they usually fly or sit in flocks of fifty or sixty together; and, while some of them feed, others watch as sentinels on duty. The fable of their supporting their aged parents may probably have originated from their strict connubial affection; and as to their fighting with pigmies, it may not be improbable that they have at times boldly withstood such monkeys as attempted to rob their nests; for, in these cases, as Cranes live on vegetables, it is not likely that they should be the first aggressors.

The Crane is a vagrant, social bird, and is known in every country of Europe except our own. 'There is no part of the world,' says Bellonius, 'where the fields are cultivated, that the Cranes do not come in with the husbandman for a share of the harvest. As birds of passage, they are observed to depart and return regularly at those seasons when their provision invites or repels them. They generally quit Europe about the latter end of autumn, and return at the beginning of summer. In the interior parts of the continent, they are seen crossing the country in flocks of fifty or a hundred, and making from the northern regions towards the southern. In these migrations, however, they are not so resolutely bent on expedition, but that, if a field of corn presents itself in their way, they will make a halt to regale on it. On such occasions they do incredible damage; and as these depredations are generally performed during the night, when the husbandman rises in the morning, with sorrow he perceives his fields laid waste by an enemy whose swiftness his vengeance cannot overtake.'

Cranes were formerly known in England, and held in great estimation for the delicacy of their flesh; and there was also a penalty laid on those who destroyed their eggs: but, at present, this country is too populous, as well as too well cultivated, and though our fields may offer them abundance, their hazard would certainly be greater than their enjoyment. Nor, indeed, does it appear that we are not greater gainers by their absence than we should be by their company; for however delicious their flesh might once have been, when, as Plutarch informs us, Cranes were blinded, and kept in coops, in order to be fattened for the tables of the great at Rome; or, when they were brought up, stuffed with mint and rue, to the tables of our nobles at home, they are now justly considered over the whole continent of Europe as wretched food, their flesh being fibrous and dry, and only fit for the stomachs of the robust and the laborious.

The favourite abodes of Cranes are the arctic

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regions: they descend into the more southern parts of Europe rather as visitants than inhabitants; yet it is not well ascertained in what manner they portion out their time with respect to the different parts of the world. The migrations of the fieldfare and the thrush are obvious and well known; they proceed northward or southward in one undeviating course; and, when their food fails them here, they have but one region to repair to. But Cranes change their places like wanderers. Gesner assures us, that these birds begin to quit Germany about the middle of September, and finally leave it about the middle of October; from whence they are seen flying southward by thousands: and Rhedi tells us, that they arrive in Tuscany a very short time after, where they tear up the newly-sown grain, and do incredible mischief. During the severity of the winter, it is probable that they approach nearer the line; and, about the middle of February, they again visit Italy, anticipating the spring, and affording the natives a prelude of that delightful season.

The heights to which these birds ascend in their migrations is truly astonishing; and their notes, which are the loudest of all other birds, are heard in the clouds at a distance wholly imperceptible. As they are lightly framed in proportion to their size, and expand their wings to a great extent, they are capable of floating at the greatest heights, where the air is most pure; and thus secure their safety by being entirely out of the reach of man.

Though Cranes, during their aerial voyages, are altogether imperceptible to human eyes, they have the most distinct vision of every object below them: they direct their flight by their cries; and incite each other to descend whenever a fit opportunity for depredation presents itself. Their voice, as before observed, is the loudest of all the feathered tribe; and its peculiar clangor arises from the extraordinary length and contortions of their wind-pipes. In quadrupeds, the wind-pipe is short; and the glottis, or cartilages which form the voice, are situated at that end next the mouth: but in water-fowl, the wind-pipe is longer, and the cartilages which form the voice are placed at the other end, which lies down in the belly. Cranes, therefore, have more sonorous voices, in proportion to their size, than any other animals; for their note, when formed below, is reverberated through all the revolutions of the wind pipe till it reaches the air.

As these birds rise but heavily, they are extremely shy, and seldom suffer mankind to approach them. Their depredations are usually committed during the darkest nights, when they sometimes visit a field of corn, and trample it down as if it had been crossed by an army; and if, on such occasions, they are invaded on any side, the Crane that first perceives the danger is sure to sound the alarm, and all of them are instantaneously on the wing. Sometimes they make choice of an extensive, solitary marsh, where they range themselves for a whole day as if in the act of deliberation; and, after finding it impracticable to procure that species of food which is most congenial to their appetites, they wade the marshes in search of insects, and other nourishment which can be obtained in security. Corn, indeed, is their favourite food, but hardly any thing comes amiss to them. Rhedi, who dissected several of these birds, found one of their stomachs filled with the herb dandelion, that of another with beans; a third with a large quan-

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tity of clover; a fourth and fifth with earth-worms and beetles; in some more, he found lizards and sea-fish; and, in others, snails, grass, and pebbles. From hence we may conclude, that these birds are easily supplied, and that they are destructive to corn-fields only occasionally.

The Crane is in general a peaceful bird, both in it's own society, and with respect to the rest of the feathered kind. Though so very large, and apparently endued with a considerable share of strength, a falcon pursues, and often disables it. Those who are fond of the amusement of hawking, let fly several hawks together against the Crane, which endeavours to avoid them by flying up perpendicularly, till the air becomes too fine and rare to support it. The hawks, however, still keep pace with it; and, though less adapted than the Crane for floating in so thin a medium, being possessed of greater rapidity, they gain the ascendancy. Both parties often rise out of sight; but shortly after begin to appear again, tumbling perpendicularly together, with great animosity on the side of the hawks, and with loud screamings on that of the Crane. Thus driven to extremity, and unable to fly, the poor Crane throws itself down on it's back, and in that situation makes a desperate resistance, till the sportsman coming up, puts a final period to the contest.

In ages less refined than the present, the barbarous diversion of breeding up Cranes to be thus baited, was much practised, the young ones being taken from the nest for this savage purpose. The Crane is certainly an animal very easily tamed; and, if we may credit Albertus Magnus, has a particular affection for man. The female, which may be distinguished from the male by being covered with feathers in those parts where the other is bald, never lays more than two eggs at a time; which are like those of a goose, but of a blueish colour. The young are soon capable of flying; and then the parents, after shewing them where their food is most easily to be found, forsake them for ever. Though yet unfledged, they run with such amazing swiftness, as to be with difficulty overtaken by any of the human species. As they advance in years, their plumage becomes gradually darker and darker; and, as a proof of their longevity, Aldrovandus assures us, that a friend of his kept one of them in a tame state for upwards of forty years.

The commonalty of every country, even at this period, pay a compassionate kind of regard to the Crane, the ancient prejudices in it's favour perhaps still continuing to operate. In some kingdoms, it is considered as a heinous offence to kill one of these birds; and though the legislature decline punishing the offence, the vulgar fail not to resent the injury. It is, in some measure, considered as the prophet of the season; and, according to it's approach or delay, they regulate the periods of their rural economy: if their favourite bird makes an early appearance, they expect a plentiful summer; but, if it is tardy in it's visit, they then prepare for an unpropitious one.

CRANE, BALLARIE, the crowned African Crane of Edwards. This species resembles the common Crane in it's size and figure, but the bill is shorter, and the plumage of a dark greenish grey. The most striking parts, however, of this bird's figure, are the head and throat. On the head there is a thick round crest, composed of bristles spreading on every side, and resembling rays diverging dif-

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ferent ways; the longest of which rays is about three inches and a half; and they are all topped with a kind of black tassels, which have a very beautiful effect. The sides of the head are bare, whitish, and edged with red; and a kind of wattle hangs beneath the throat, resembling that of a cock, except that it is undivided. The eyes are large and prominent; the pupils are black, with gold-coloured irides; and on each chap there is the appearance of a white line, terminating in one that is red on the upper part.

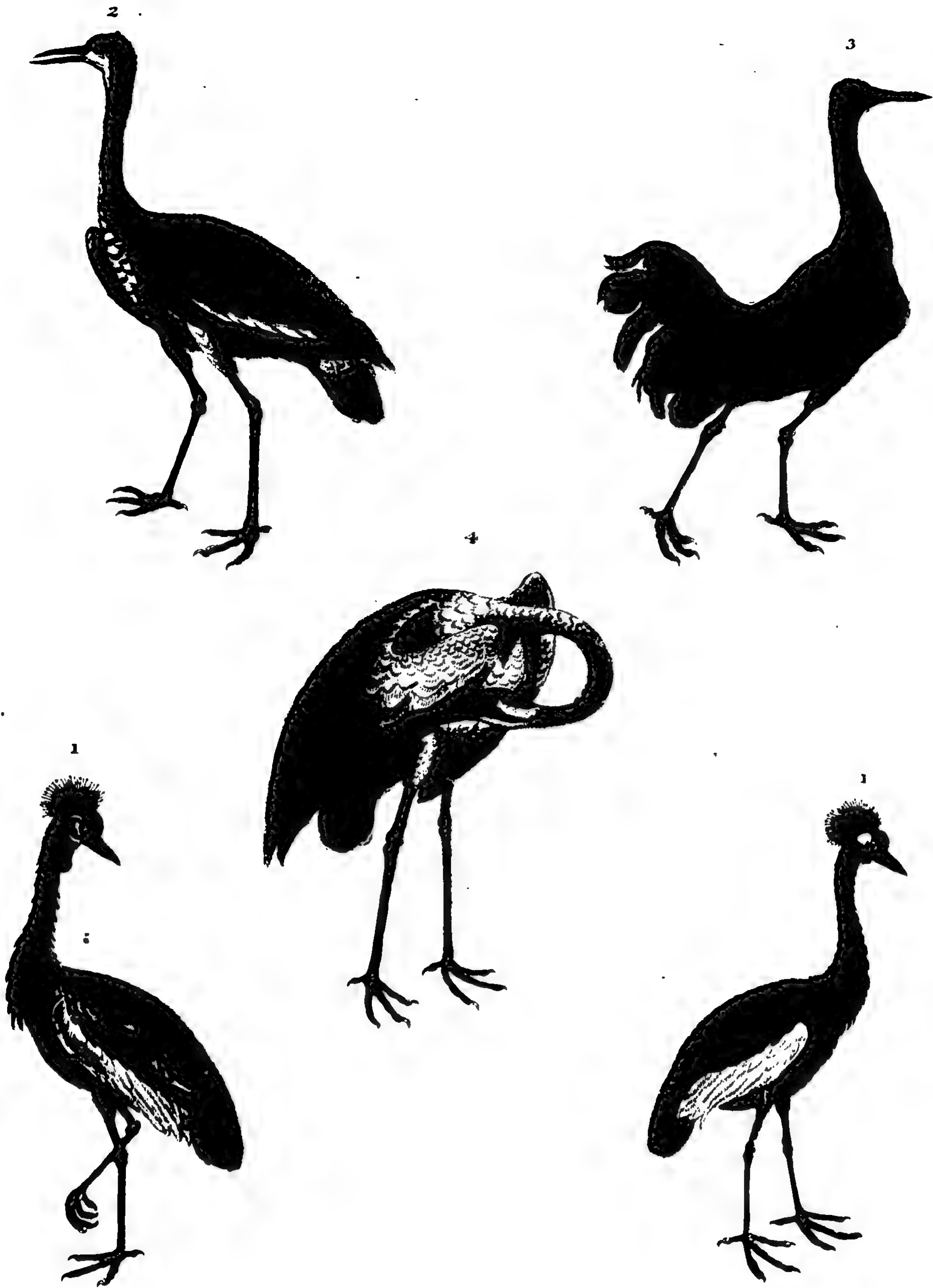
This bird, which is a native of the coast of Africa and the Cape de Verd islands, feeds on grass and seeds. As it runs, it extends it's wings, and moves very swiftly; but it's usual pace is slow and majestic.

CRANE, HOOPING. The length of this bird, from the tip of the bill to the end of the claws, is five feet seven inches; the bone which extends from the knee to the foot is eleven inches; and the thigh is bare five inches above the knee: the middlemost toe is five inches long without the claw; and the bill, which is toothed at the point, is six inches long. The nostrils are placed, in the channel on each side, at about a third part of the length from the head; and the chaps are of a yellowish brown colour at their extremities, and a little dusky in the middle. The top of the head is covered with a reddish skin; behind which there is a triangular spot, with one of the points backwards. The sides of the head, the throat, neck, body, and tail, are white; but the nine exterior quills of the wings are black; the tenth is black and white; and the rest are entirely white. The outer and middle toes are united by a web as far as the first joint; and the legs and feet are covered with black scales.

The Hooping Crane is generally considered as a bird of passage: it is, however, observed, about the beginning of spring, near the mouths of the rivers in Florida.

CRANE, BROWN AND ASH COLOURED. The bill of this bird is four inches long; and the wings, when closed, are eighteen inches. The leg bone, from the knee to the foot, is seven inches long; and the middle toe is above three inches. The bill, which is formed like that of the hooping Crane, is of a dusky colour, except the point of the lower chap, which is of a light flesh. The top of the head, from the bill to the ear-holes, is covered with a reddish skin, thinly beset with black hairs; but the sides of the head beneath the eyes, and the inferior side of the throat, are white. The hinder parts of the head and neck all round are cinereous, and gradually become brown at the side of the breast. The beginning of the back, and the covert feathers of the wings, are of a light reddish brown, with tips of a darker hue. The greater quills are a blackish brown, with white tufts; and those which fall next the back are brown, their points extending beyond the primary-quills when the wings are closed. The tail is of a brownish buff colour, and the breast changes from brown to cinereous, which colour reaches to the covert feathers of the tail, where they are whitish. The lower part of the back, the rump, and the upper covers of the tail, are of a light ash, and the legs and feet are entirely black, the former being bare above the knees. This bird was first brought from Hudson's Bay, to which it relates in the name of the son.

CRANE, NUMIDIAN. This bird is vulgarly called the balloon-bird; and, by the French, *degon*.



1. BALEARIC CRANES. 2. BROWN AND ASH-COLOURED CRANE.
3. COMMON CRANE 4 HOOPING CRANE.

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felle, or lady, because it is supposed to imitate the gestures and dances of the Bohemian ladies; for no sooner does the Numidian Crane perceive itself noticed, than it begins to dance, and to exhibit a variety of gesticulations: but whether these antic tricks proceed from vanity or fear, is rather doubtful, though we are inclined to adopt the latter cause.

The Numidian Crane is furnished with appendices at the head three inches and a half in length, composed of white feathers consisting of long fibres; but the rest of the plumage is of a leaden grey colour, except some large feathers in the wings which are darker, and a few about the head and neck. Some of these birds have plumes of feathers erected like a crest on the top of the head; and from the corner of each eye a streak of white feathers passes under the appendages which form the great feathered ears; and the fore-part of the neck is adorned with black feathers, composed of very fine soft and long fibres hanging down on the stomach, which give the bird a very graceful appearance.

The length of this species, from the tip of the bill to the end of the claws, measures three feet and a half; that of the neck fourteen inches; and, from the thigh-bone to the extremity of the great toe, ten inches. The fore-sides of the legs are covered with large scales; the soles of the feet have the appearance of shagreen leather; and the claws are black.

CRANE-FLY. An appellation given by some authors to the creature vulgarly known by the name of father long-legs, and called by naturalists *tipula terrestris*.

This insect presents the microscopic observer with many curious particulars: but the surprizing contraction of the muscular fibres of it's legs is the most remarkable; these being dissected in a drop of water, and placed before the microscope, the fleshy fibres contract and distend themselves in a very curious manner, and continue this motion for several minutes successively; a circumstance, according to the ingenious Leewenhoek, invariably observed in this insect, and in no other. The intestines of this animal are likewise very wonderfully constructed, consisting of numerous vessels and organs, as plainly perceptible by the assistance of the microscope, as the bowels of larger animals are by the naked eye. The tail, both in the male and female, is also of an amazing construction; that of the female terminating in a sharp point, with which she perforates the ground, in order to deposit her eggs.

CRASSIROSTRÆ. A genus of small birds distinguished by the thickness of their beaks; of which kind are the sparrow, the green-finch, and several others.

CRAVANT. An appellation given by Bello-nius, and some other authors, to the barnacle, a small species of wild-goose common on the Lancashire coasts during the winter season.

CRAX. A name given by the ancients to the ortygometra, or claker hen; a bird somewhat larger than the quail, and very common in Ireland, and some of the northern counties of England.

CRAX. The name of a distinct genus of birds of the gallinæ class in the Linnæan system of zoology; the distinguishing characters of which are, that the base of the bill is covered with a case in each mandible; and the head is ornamented with a kind of feathery crown, bending backwards. Of these birds there are five species.

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CRAY-FISH. A species of cancer, or cancer astacus, in the Linnæan system.

The Cray-Fish differs very little from the lobster, except in the smallness of it's size. The body is round; and the head is terminated by a pretty broad horn, short and pointed, under which the eyes are placed. On the fore-part of the head there are four horns or feelers, two long and two short, whose ends terminate in hairs. The pinchers, which consist of five joints, are forked, rough, and dentated; and on each side there are four feet, the two first of which towards the pinchers are cloven at the end, and the next two are each furnished with a spur. The upper part of the body is covered with five scaly plates; and there are five fins on the tail.

Cray-Fish are found in almost every river, and even brook, in England; and their flesh is reckoned cooling, moistening, and well adapted to nourish such as labour under atrophies. There are various methods of dressing them: they may be either boiled or fried, and then converted into a variety of dishes; but no parts of them are proper for food, except their claws and tails. Preparations and broths of Cray-Fish not only constitute a pleasant aliment, but likewise answer some medicinal purposes, as possessing a moistening quality, and sheathing up and correcting acrimony. The broth is made from four or five of these fish; which, after having their heads cut off, and their intestines extracted, are bruised and boiled in the broth or flesh of poultry till they become red; after which, the liquor is strained off, and seasoned as the case may require.

Cray-Fish are reckoned to be in season during the summer months; but the delicacy of their flavour depends in a great measure on their food. When they receive proper aliment, their flesh has an agreeable relish; but when they feed on putrid substances, it is thereby often rendered very unpalatable.

In the River Obra, on the borders of Silesia, Cray-Fish are prodigiously numerous; but they possess such a bitter aromatic flavour, as to be scarcely eatable. This taste probably arises from the vast quantities of calamus aromaticus growing on the banks of that river, the roots of which these animals devour with greediness. Cray-Fish are likewise very plentiful in the River Don in Muscovy, where they are caught, piled in heaps, and left to putrify; after which the stones called crabs eyes are picked out. Being very fond of human flesh, they flock in great numbers to any carcase accidentally immersed in the water, and seldom leave it while a single particle remains: they also feed on dead frogs, or any other animals which come in their way. In Switzerland, there are some Cray-Fish which are red while alive, and others blueish; and some kinds also which will never become red by boiling, but maintain their original sable hue.

The Cray-Fish discharges it's stomach, and, as Geoffrey thinks, it's intestines also; which, as they putrify and dissolve, serve the animal for food; and, during the time of the reformation, the old stomach seems to be the first food which the new one digests. It is only at this period that the stones called crabs eyes are to be found: they begin to be formed when the old stomach is destroyed; and are afterwards wrapped up in the new one, till they gradually disappear by a slow decrease.

CREEPER. The English name for a species of isipida, which though very dissimilar to the, common

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common king's-fisher both in colour and figure, on account of the structure of it's feet, is comprehended under that genus. It is likewise called the certhia, and certhus, by authors; and, in English, the ox-eye. The species are numerous.

CREEPER, COMMON. This bird adheres to the trunks and boughs of trees, and creeps on them like the wood-pecker. It is about the size of a wren; and is furnished with a long, slender, sharp bill, incurvated downwards, by which mark it is distinguished from all other birds. The tongue, which is about the length of the bill, is hard and stiff at the point, and sharp like a goad; the longest feathers of the tail are sharp and stiff, as in pies; and the upper part of the body is dusky, and the lower whitish.

CREEPER, BLACK AND YELLOW. This bird, which is a native of Jamaica, is about four inches long. It agrees pretty much with the common Creeper; having a slender, sharp-pointed bill, a little bending down, and black. The head, neck, throat, back, wings, and tail, are black; and over each eye there is the appearance of a white line. The bases of the great quills next the belly are white; and all the tail-feathers, except the two central ones, are tipped with white. The breast, the rump, and the borders of the wings, when they fall on the breast, are a fine bright yellow, a little inclining to a gold colour. The thighs, the lower belly, and covert-feathers under the tail, are of a pale yellow or whitish colour; and the legs and feet are dusky. Sir Hans Sloan says, that the rump above the tail is yellowish; and that the legs are no more than half an inch long.

CREEPER, BLUE. This bird has a small head, a short tail, and a long bill agreeing with the Creeper kind. The bill is about an inch long, slender, incurvated downwards, and blackish; and at the base of the upper mandible the feathers are black, and united to a black line drawn from the corners of the mouth to the eyes. The head and body are a fine deep blue; the prime-feathers, as well as the row next above them, are black; and the lesser coverts of the wings are blue. The tail is short, and of a blackish colour; and the legs, feet, and claws, are of a light yellow brown.

CREEPER, BLACK AND RED INDIAN. This curious little bird has a black bill, which extends pretty far into the head: it's upper side is of a deep black colour, except some bright scarlet spots, the first of which covers the entire crown of the head; the second is in the middle of the hinder part of the neck; the third crosses the middle of the back; and the fourth and last takes up the covert-feathers of the tail. The tail and wings are wholly black, extremely glossy, and reflecting a deep blue. The entire under-side, the throat, neck, breast, belly, thighs, and covert-feathers under the tail, are white; and the legs, feet, and claws, are black.

This bird is a native of Bengal in the East Indies, and was first figured and described by Edwards.

CREEPER, BLACK AND BLUE. The bill of this species is pointed, slender, arched both above and below, and of a blackish colour; the crown of the head is a pale green; and round the base of the upper mandible there are blackish feathers, passing in black lines on both sides of the head, in which the eyes are placed. The sides of the head, the hinder part of the neck, the lower part of the back, the rump, the covert-feathers of the tail, a bar intersecting the superior part of the wings, and the

CRE

whole under-side of the bird, are of a very fine ultramarine blue colour. A broad black line crosses the upper part of the back; the tail, and the exterior sides of the wings, are black; the insides of the wings are of a beautiful yellow colour, except round the ridges and the tips of the quills, which are dusky; and the legs and feet are orange-coloured. This bird is probably the same with the *guira coereba* of Marcgrave, described in his History of Brazil.

CREEPER, PURPLE INDIAN. This species has a long, black, arched bill; the head, neck, back, rump, and covert-feathers of the wings, are of a dark blueish purple colour; the tail is black; the belly, thighs, covert-feathers under the tail, and quill-feathers of the wings, are of a dusky brown; the inside of the wings, and the under-side of the tail, are of a dark cinereous hue; the breast is tinged with green; on each side there is a spot of yellow or gold-coloured feathers; and the legs and feet are black. This bird is a native of the East Indies.

CREEPER, GREEN. The bill of this species is incurvated downwards like the rest of the family, and is of a dusky hue, except at the base of the lower mandible, where it is flesh-coloured. The whole bird is of a fine parrot-green colour, except the tips of the quills, which are dusky. The top of the head, the neck, back, wings, and tail, are darkest, and appear of a blueish green; the whole under-side, as well as the rump, are lighter, and somewhat inclining to yellow; and the legs and feet are dusky, or black. This bird is a native of the Spanish West Indies.

CREEPER, NEW ZEALAND. This bird, which is pretty large, has a black bill; the head, neck, breast, back, and quill-feathers, are of a glossy deep green; the first row of the coverts of the wings is a changeable green and blue, and the second white; the hind-part of the neck is marked with a large rich blue crescent, in which some curled white feathers project beyond the rest; and underneath, on each side of the throat, there is a bunch of white curled feathers. The tail is long, and of a deep green colour, except it's coverts, which are blue; and the legs are of a dusky hue.

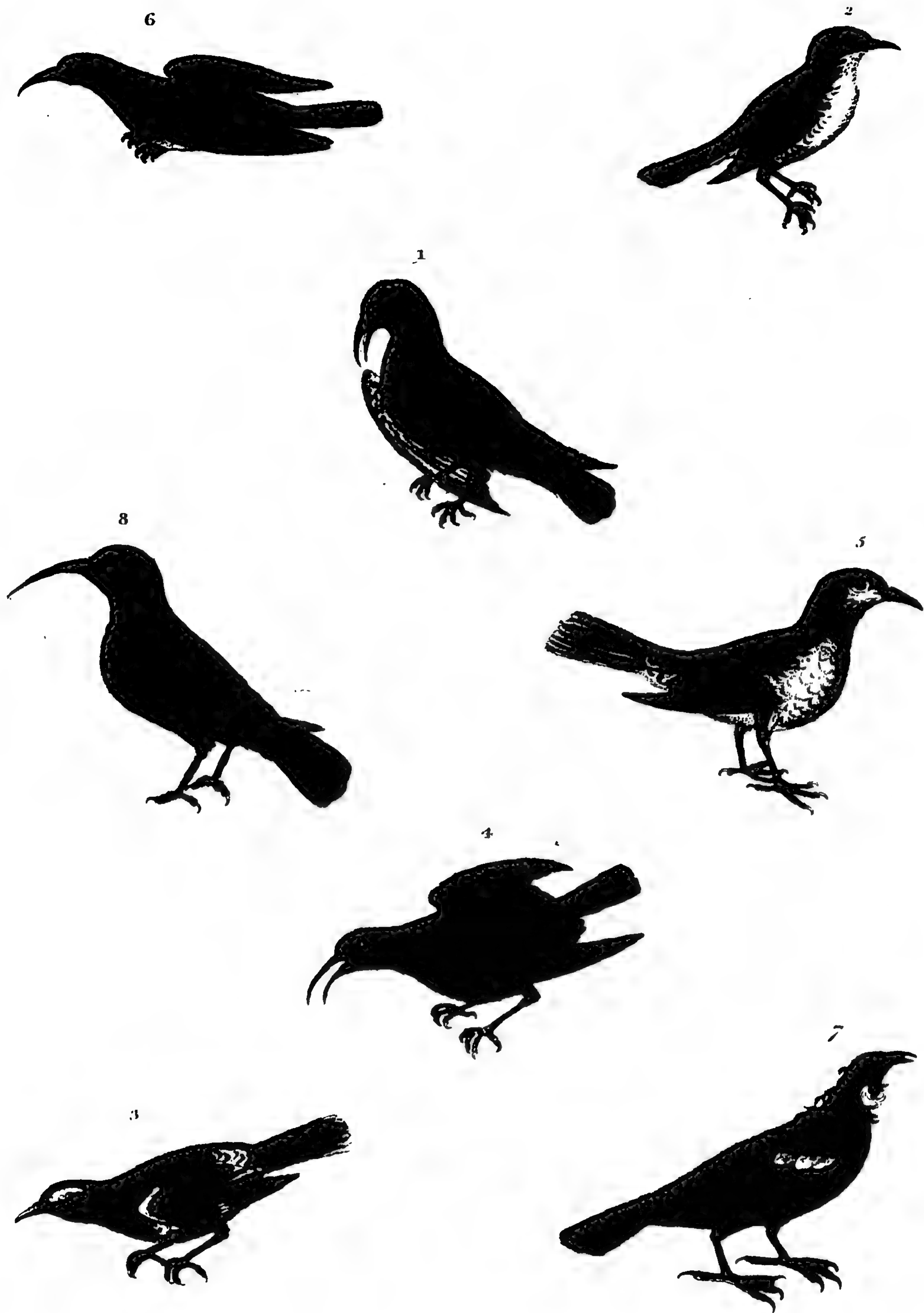
CREEPER, LUÇON. Sonnerat, in his Voyage to New Guinea, mentions three species of Creepers which he met with at the isle of Luçon.

The first species has an olive-coloured body; the throat and top of the breast are of a shining blue; the belly is a bright yellow; and the bill and feet are black.

The upper part of the body of the second species, which is probably the female of the preceding, is also of the same olive colour, but less deep; the throat, breast, and belly, are yellow; and the feet and bill are black.

The crown of the head of the third species, which is by far the most beautiful, is of a pale green colour; the throat is a bright violet; the belly is a vivid red; the back, and the lesser coverts of the wings, are of a golden hue; the larger coverts are black; and the feathers which surround the vent and the tail are of the colour of polished steel, with a greenish cast.

CREX. A bird so called from it's continually repeating *Crex, Crex*. The beak is of a moderate length, and of a black colour; the head and legs are also black; the neck, breast, and back, are white; and the wings are black variegated with white. It feeds on insects, and generally makes a loud noise while it continues on the wing. The name



1 BLACK AND BLUE CREEPER 2 BLACK AND RED INDIAN CREEPER 3. BLACK AND
YELLOW CREEPER 4 BLUE CREEPER 5. GREEN CREEPER 6. LUCON CREEPER 7. NEW
ZEALAND CREEPER. 8 PURPLE INDIAN CREEPER.

name *Crex* has likewise been applied to the crake, or land-rail; but it does not appear that they are the same.

CRICETUS. This animal is sometimes called the German rat, but is described by Buffon under the appellation of hamster. It is of the size of the water-rat, which it resembles in the smallness of its eyes and the shortness of its tail. With respect to colour, it is rather of a deeper brown than the Norway rat, except the belly and legs, which are a dirty yellow. But the characters by which it may be distinguished from all others, are two pouches, like those of a baboon, on each side of its jaw, under the skin, into which it generally crams a large quantity of provisions. These bags, which are oblong, and when filled are each of the size of a large walnut, open into the mouth, and fall back along the neck to the shoulder: into these the animal thrusts the surplus of those fruits or grains which it gathers in the field, after the immediate calls of hunger are satisfied; and, thus loaded, it returns to its hole, in order to deposit the spoil, as a resource against the winter season. The size, the fecundity, and the voracious appetites of this animal, render it one of the greatest pests in those countries of which it is a native, and every method is practised for its extermination.

But though the *Cricetus* is very noxious to mankind, if considered with regard to those instincts which conduce to its own support and convenience, it claims our admiration. Its hole, which offers a very curious object for contemplation, and evinces a degree of skill infinitely superior to the rest of the rat kind, consists of a variety of apartments fitted up for the different occasions of the tenant: it is generally formed on an inclining ground; and is always furnished with two entrances, one perpendicular, and the other oblique; but, if there be more than one in a family, there are as many perpendicular holes as inhabitants. The perpendicular hole is that through which the animal usually ascends and descends; while the oblique one admits a freer current of air, as well as affords a safe egress when the other passage is accidentally stopped up. Within a foot of the perpendicular hole, there are two more, where this creature's provisions are deposited: these are much more spacious than the former, and are large in proportion to the quantity of stores. Exclusive of these, there is still another apartment, warmly lined with grass and straw, in which the female brings forth her young. All these communicate with each other, and collectively occupy a space of ten or twelve feet in diameter. The store-houses are properly furnished with dry corn, well cleaned; and sometimes corn in the ear, beans, and peas.

These animals usually begin to lay in their winter stock about the latter end of August; and, as soon as each magazine is filled, they carefully close the mouth of it with earth, in so compleat a manner, that it is difficult to discover where the entrance has been turned. The only means of finding out these subterraneous retreats, are to observe the oblique entrances, which generally have small mounds of earth before them, and these, though they are several yards from the perpendicular retreats, are those who are skilled in the search to the several apartments. Many German peasants profess to be skilful in finding out and bringing off great numbers of these creatures, which, in a fruitful year, often furnish two bushels of good grain in a day's labour. Like most others of the rat kind,

they generate twice or thrice in a year, bringing forth five or six at a time. At some periods they are astonishingly numerous; and, at others, they are less so. Moist seasons assist their propagation; and it often happens that, at such times, their devastations produce an universal famine. Fortunately, however, for mankind, these creatures, like the rest of their kind, destroy each other; and, of two which Buffon kept in a cage, male and female, the latter killed and devoured the former.

The fur of these animals is reckoned exceedingly valuable; for which reason the natives are very assiduous in their destruction. They have usually brown backs, and white bellies: many of them, however, are of a grey colour; which variation probably arises from a difference in their ages. They are very common in Thuringia and Misnia; and, according to St. Jerome, there are vast numbers of them in Palestine.

CRICKET. A genus of insects of the hemiptera class, nearly allied to the locust kind. Their distinguishing characteristics are these: the feelers are bristly; the covers of the wings are membranaceous; and the legs are adapted for leaping.

CRICKET, COMMON. This insect greatly resembles the locust in its conformation, its manner of ruminating, its voice, its leaping, and its methods of propagation: but it entirely differs from that insect in its colour, which is uniformly of a rusty brown; in its food, which is more various; and in its place of residence, which is usually the warmest chink of an oven or hearth. The smallest openings afford shelter for these animals; and, wherever they fix their abodes, they are sure to propagate. Being of a very chilly nature, they seldom leave the heat; and, if undisturbed, frequently hop from their retreats, in order to chirp at the blaze of the fire. Whether the voice of the Cricket is formed in the same manner with that of the grasshopper, namely, by a fine membrane at the base of the wings, moved by a muscle, and which, being coiled up, gives a sound like that of a quail-pipe, is not yet well ascertained; nor are we acquainted with the use of its voice, since anatomical inspection has not been able to discover the smallest auditory organs. Still, however, it is probable that these animals possess the power of distinguishing sounds, though in a less perfect manner than the superior ranks of nature, for they frequently call on and answer each other; though it should be observed, that the males only are vocal.

As Crickets live chiefly in the dark, their eyes seem fitted for the gloominess of their abodes, and those who would surprize them, need only light a candle suddenly, by which means they will be so dazzled and bewildered, as to be incapable of finding out their retreats.

These little animals, which are very voracious, will eat bread, flour, and meat, but are particularly fond of sugar. They never drink, but continue for months together at the backs of chimnies, where they cannot possibly receive any moisture. The warmth of their situation increases their mirth and loquacity; and, except in very cold weather, they never intermit their chirping, which is as disgusting to some people as it is grateful to others. The celebrated Scaliger, who is said to have been greatly delighted with the chirping of Crickets, usually kept several of them in a box, placed in a warm situation. Some people, on the contrary, who think that their voices are ominous, use all methods to destroy them; and Lactius in

forms us, that a certain woman, who was very much incommoded by these animals, and had in vain tried many expedients to banish them from her habitation, at length accidentally succeeded as follows: having invited a few of her acquaintances for the purpose of celebrating the nuptials of two of her particular friends, in order to increase the festivity of the entertainment, she procured several drums and trumpets; the noise of which instruments had such an astonishing effect on these insects, that they immediately forsook their retreats, for they were never heard in future.

CRICKET, MOLE. This animal is the largest of all the Cricket kind with which we are acquainted, being two inches and a half in length, and three quarters of an inch in breadth. The colour is a dusky brown; and, at the extremity of the tail, there are two hairy excrescences, somewhat resembling the tail of a mouse. The body, which consists of eight scaly joints or separate folds, is brown above, but more deeply tinged below; the wings, which are long and narrow, terminate in sharp points, each having a longitudinal blackish line; the shield of the breast is of a firm texture, hairy, and blackish; the fore-feet, which are the principal instruments made use of by this animal in burrowing into the earth, are strong, webbed, and hairy: it generally, however, runs backward; but it commonly resides under ground, into which it penetrates more expeditiously than the mole. It is also supposed by some naturalists to be amphibious, and to be capable of living under water as well as under ground.

No insect is more formidable to gardeners than the Mole Cricket, as it chiefly inhabits that earth which lies light, and where it finds sufficient nourishment under the surface. Thus, in a single night's time, it will traverse the whole of a newly-sown furrow, and rob it of all its contents. Its legs are constructed in such a manner, that it can penetrate the earth in every direction, before, behind, and above. During the night, it ventures from its subterraneous habitation; and, like the common Cricket, exercises its chirping call. When the female is fecundated, she forms a cell of clammy earth, the inside of which is sufficiently capacious to contain two hazel-nuts; and in it she lays her eggs: the whole nest, which is about the size of a common hen's egg, is closed up on every side. The eggs, generally amounting to about a hundred and fifty, which are white, and each about the size of a carraway comfit, are carefully covered, as well to defend them from the injuries of the weather, as from the attacks of the black beetle; which being itself an under-ground inhabitant, would certainly, but for this precaution, either devour or destroy them. In order to prevent this calamity, the female Mole Cricket frequently places herself near the entrance of the nest; and, whenever the beetle attempts to seize its prey, the guardian insect catches it behind, and bites it asunder.

Nothing can possibly exceed the care and assiduity of these animals in the preservation of their young. Wherever a nest is situated, fortifications, avenues, and entrenchments, surround it: there are also numerous meanders which lead to it; and a ditch encompasses the whole, which few other insects are capable of passing. But the diligence of these Mole Crickets does not terminate here: at the approach of winter they move their nests entirely away, and sink them deeper in the ground; so that the influence of the frost cannot retard the

maturation of their young brood. When the weather grows milder, they raise their magazines in proportion; till at last they are brought as near the surface as possible, without being wholly exposed to view, in order to receive the genial influence of the sun: but should the frost unexpectedly return, they again sink them to their former depth.

CRICKET, FIELD. This species is of a blackish colour; with a large head in proportion to the body, and full prominent eyes. The forehead is furnished with two feelers without joints, but they are capable of inflection at the animal's pleasure. It has six legs of the same colour with the body; the hindmost of which being the longest, enables the insect to leap with the greater facility. The wings seem to be slightly variegated with sculptures, which cover almost the whole body; and the tail is forked. The body of the male is less than that of the female; and the latter has grass-green eyes, red feelers, and a trident tail.

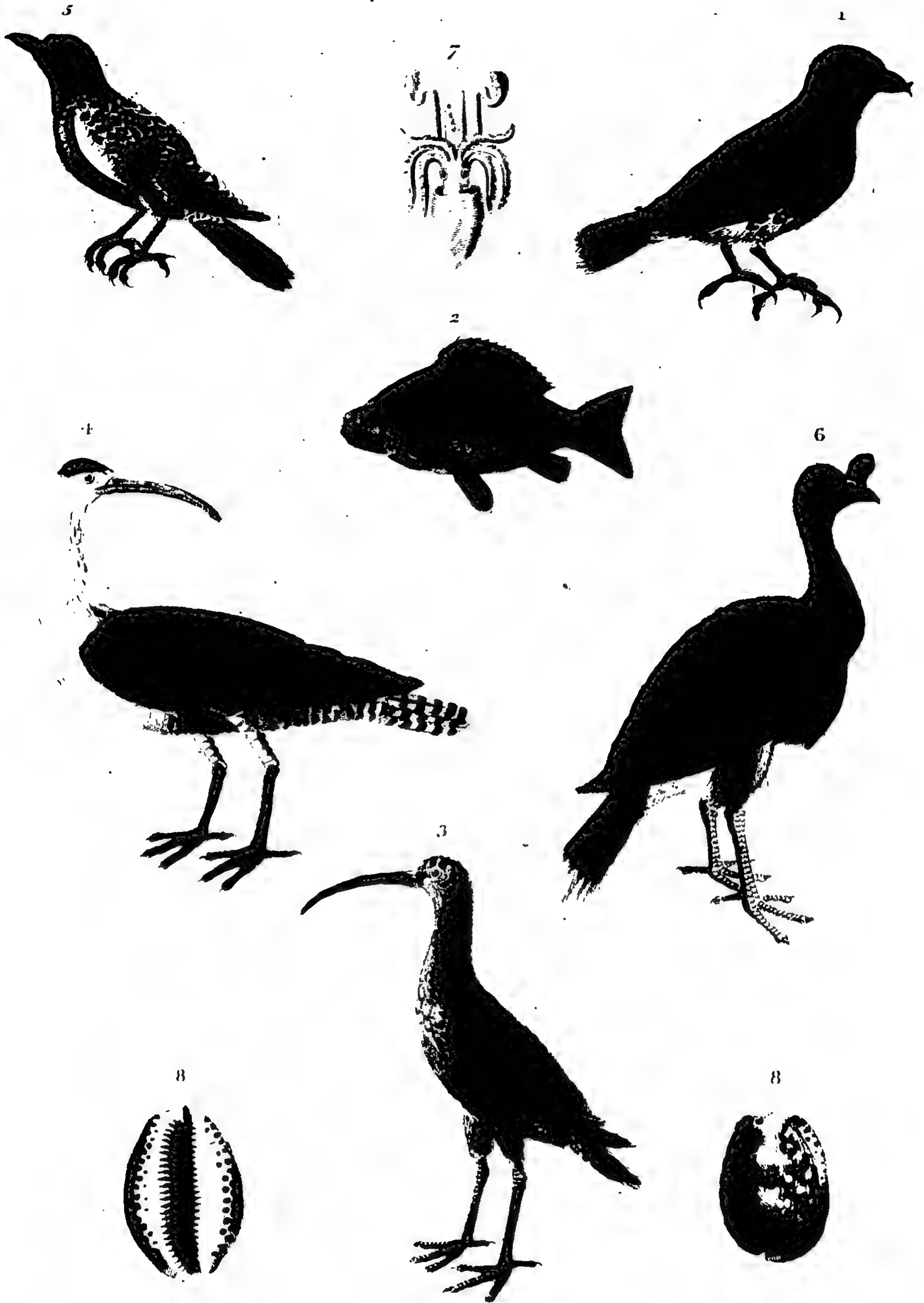
These insects make their nests in the fields during the summer season, where they lie concealed in a mild winter; but, when a severe one happens, they burrow in the ground. They make a very singular noise with their wings; chirp day and night; and delight to bask in the sun, sitting at the mouths of their holes.

CRICKET, WATER. This insect has a pentagonal head, with prominent, globous, black eyes; near the mouth there are very short feelers; and on each side there are three feet, the hindmost being considerably the longest. The body is of a brownish, or rather a whitish black colour; the rudiments of wings appear on the back; and the tail is forked. It differs from the land Cricket in having a more prominent head, and a short neck, and the wings seem entirely useless for flight, though they assist the animal in rising. It is commonly seen sitting on aquatic plants, and emits a sound almost similar to that of the land Cricket.

CRISTA GALLI. An appellation given to a particular species of oyster, called by some *auris porci*, or the hog's-ear shell.

CROCEUS. An amphibious animal mentioned by some authors, which is neither fish nor bird, but both. During the summer, it assumes the form of a bird of a fawn colour, and frequents the mountains; but, towards the end of autumn, it returns to the sea, and becomes a fish. Where this creature is found, or what are its particular habits, is not ascertained; though the same fertility of invention which gave it birth might have also furnished its history.

CROCODILE. The largest animal of the lizard kind. It grows to the length of twenty five feet and upwards, and is about the thickness of a man's body. The nose somewhat resembles that of a hog; the mouth is enormously large; and the superior jaw moving in the opening of it, gives the creature a very terrible aspect. The teeth, which are large, white, and numerous, are disposed like those of a comb; and in the lower jaw there are two very long ones which pass into cavities in the upper. The legs are placed sideways, and the feet are armed with extremely sharp claws, of which there are five on the fore ones, and four on the hind. The length of the tail is equal to that of the whole body; the skin of the belly is soft and easily penetrable; but that of the rest of the body is covered with strong prickly scales, which are proof against either spears or musquet-balls. The colour of some of these animals is a dusky brown.



1. LESSER CROSS-BILL. 2. CRUMMAN. 3. CURLEW. 4. SPECKLED CURLEW. 5. SPOTTED CURLEW. 6. CUSHEO-BIRD. 7. CUTTLE-FISH. 8. CYPRAEA.

with an admixture of grey; and, of others, a reddish yellow; but the former is the most common. This tremendous animal is a native of the rivers of the torrid zone, where it lies concealed among sedges and reeds till an opportunity offers of attacking some other animal, man himself not excepted. It's general food, however, is fish, of which it devours immense quantities. It's eggs are about the size of those of a goose, of which it lays fifty or sixty for a brood, burying them in the sand, and then leaving them to be impregnated by the heat of the sun. For a full and particular description of this animal, see ALLIGATOR.

CROCOTTA. A name given by the ancients to a very fierce and terrible animal produced by copulation between the large hyæna and the lions.

CROOK-BACK FISH. The name of this fish is derived from it's very singular shape. It's skin is smooth, having no scales; it's belly is white; and it's fins and tail are yellow. It grows to upwards of four feet in length; and it's flesh is much admired all over the East Indies on account of it's agreeable flavour.

CROPPER. A particular species of pigeon, called by Moore the *columba gutturosa* Bataviae. It's figure is clumsy; and it receives it's name from a large crop, or bag of wind, under it's beak, which it can either raise or depress at pleasure. The legs, which are thick and short, are covered with feathers down to the very feet; the feathers on the thighs hang loose; and the legs are placed at an uncommon distance from each other. The crop, which is large, hangs very low; and the eyes are of a gravelly hue. Pigeons of this kind are of various colours.

CROSS-BILL. A genus of birds of the order of passeres, in the Linnæan system of zoology; the distinguishing characters of which are, that the tongue is plain, equal, and whole; and that the beak is large, thick, short, crooked, and convex both ways.

The Cross-Bill is an inconstant visitant of the British islands; but Gesner informs us that, in Germany and Switzerland, it inhabits the pine-forests, where it breeds so early as the months of January and February. It feeds on the seeds of the cones of pines and firs, and is very dextrous in scaling them; for which purpose the cross structure of the lower mandible of the bill is admirably adapted. It also subsists on hempseed and the kernels of apples.

It is indisputably true that Cross-Bills change their colours, or rather the shades of their colours; the males, which are usually red, varying at certain seasons to a deep red, to an orange, or to a kind of yellow; and the females, which are green, changing to different varieties of the same colour.

There are two sorts of this bird, the largest of which is very rarely seen; but Edwards thus describes the lesser.

CROSS-BILL, LESSER. The bill is pretty thick and strong, and of a dusky colour; the eyes are a dark hazel; the head, neck, breast, back, and rump are a very deep red; the upper sides of the tail and wings are dusky; the edges of the quills and the tail feathers are reddish; the insides of the wings and under-side of the tail are ash-coloured; the throat, lower belly, and covert-feathers beneath the tail, are whitish, with some dusky spots; and the legs and feet are of a tawny flesh-colour. The female is of a yellow-greenish hue where the male

is red; but, in other respects, they pretty much agree.

CROTALOPHORUS ANGUIS. A term frequently used to express the rattle-snake.

Crotalophorus Anguis is also sometimes applied to a remarkable species of serpent more usually known by the name of cobra de capello.

CROW. The carrion or common Crow resembles the raven in the shape of it's body, it's appetites, and the manner of bringing up it's young. It feeds on carrion, or any other filth; and, when that cannot be obtained, it contents itself with grain and insects. Like the raven, it will pick out the eyes of lambs as soon as they are dropped; and indeed it only differs from that bird in being less bold, less docile, and less favoured by mankind.

England produces more birds of this kind than any other country in Europe. In the reign of Henry VIII. they were grown so numerous, and deemed so injurious to the farmer, that they were regarded as an evil worthy of parliamentary redress; and an act was accordingly passed, in the twenty-fourth year of the reign of that prince, for their destruction, in which rooks and choughs were also included. Every hamlet was to provide crow-nets for ten years; and, during that space, the inhabitants were obliged to assemble at certain times, in order to project the most effectual methods for extirpating them. But though Crows are very numerous in England, they are so uncommon in Sweden, that Linnæus mentions them only as birds he once knew killed there. The Crow lays about the same number of eggs as the raven, and they are of the like colour. Both of these birds are sometimes found white, or pied; but such are esteemed no inconsiderable objects of curiosity. The length of the Crow is about eighteen inches; the expansion of it's wings is two feet two inches; and it's weight is about twenty ounces.

Crow, ROYSTON, OR HOODED. The bill of this species agrees in shape with that of the rook; and they resemble each other in their habits, both of them flying in flocks, and feeding on insects. The Royston, or Hooded Crow, which is a bird of passage, visits England in the beginning of winter, and leaves it with the woodcock. It is found both in the inland and maritime parts of this kingdom; and, in the latter, it feeds on crabs and shell-fish.

This kind of Crow is very common in Scotland; and in many parts of the Highlands, as well as in all the Hebrides, Orknies, and Shetland isles, is the only genuine species, the carrion and the rook being there entirely unknown. It breeds and continues in these places during the whole year; and, perhaps, those of them which inhabit the northern parts of Europe are such as migrate here. In the Highlands, they build indifferently in all kinds of trees; lay six eggs; have shriller notes than the common Crows; and are much more mischievous.

Belon, Gesner, and Aldrovandus, all agree, that the Crow is a bird of passage in their respective countries; and that it visits high mountains in the breeding season, and descends into the plains on the approach of winter.

The length of this species is about twenty-two inches, the breadth twenty-three inches, and the weight twenty-two ounces. The head, the under side of the neck, and the wings, are black, finely glossed with blue; the back, breast, belly, and upper part of the neck, are of a pale ash-colour; the

legs are black, and smaller than those of the rook; and the bottoms of the toes, which are very broad and flat, enable it to walk, without sinking, in muddy and marshy grounds, to which it greatly resorts.

CROW, INDIAN. This species, which has a yellow streak, of an uncommon form, running from the top of the head to the eyes, is of the colour of the common pigeon; and the last quill-feathers of the wings are each marked with a red streak in the middle. There are two birds of this kind; the bill and legs of the largest are of a bright yellow; but the smallest is wholly red, mixed with a little yellow.

CROW, CAROLINIAN. Lawson affirms that the flesh of this species is as proper for food, and as palatable, as that of the pigeon. It never feeds on carrion, but is a great enemy to corn-fields; and its voice and manner of building its nest resemble those of the rook.

CROWN IMPERIAL SHELL. A species of the voluta.

CRUCIAN. This fish, which is called the cyprinus carassius by Linnæus, is common in many of the fish-ponds in the vicinity of London, and other parts of the south of England; but, according to Pennant, is not a native fish. It is very deep and thick; the back is much arched; the dorsal fin consists of nineteen rays, the two first of which are strong and serrated; the pectoral fins have each thirteen rays, the ventral nine, and the anal seven or eight; the lateral line runs parallel; and the tail is almost even at the extremity.

This fish is generally of a deep yellow colour; and the flesh is coarse, and not much esteemed among those who have higher luxuries at command.

CRUSTACEOUS FISH. A name of distinction given to such fishes as are covered with shells composed of several pieces or scales, such as crabs and lobsters. These shells are usually softer than those of the testaceous kind, which consist of a single piece, and are commonly much thicker and stronger than the former; such as those of the oyster, scallop, and cockle.

CRUYSHAGE. A fish of the shark kind, somewhat approaching to that singular one called the zygæna, but much less monstrous, its head being only triangular, or something of the shape of a heart; whence Willughby has named it *zygæna affinis capite triangulo*. The eyes are very small, and placed at the sides of the head; and the mouth, which is small and triangular, and situated a great way beyond the end of the nose, is furnished with three rows of very minute teeth.

CUCKOW. A distinct genus of birds of the order of picæ in the Linnæan system of zoology; the characters of which are, that the feet are adapted for climbing, having two toes before, and two behind; that the bill is smooth, and somewhat arched; that the tail is whole, and composed of ten feathers; that the tongue is short and membranaceous, and terminated by hairs; and that the nostrils are prominent. Linnæus enumerates twenty-two species.

The note of the Cuckow is universally known; but its history and nature are enveloped in obscurity. It has been asserted by some, that this bird devours its parent; and that it changes its nature with the season, and becomes a sparrow hawk; but these legends have long since been sufficiently confuted. Still, however, it remains a secret where the Cuckow resides in winter, and how it is nourished during that inclement season.

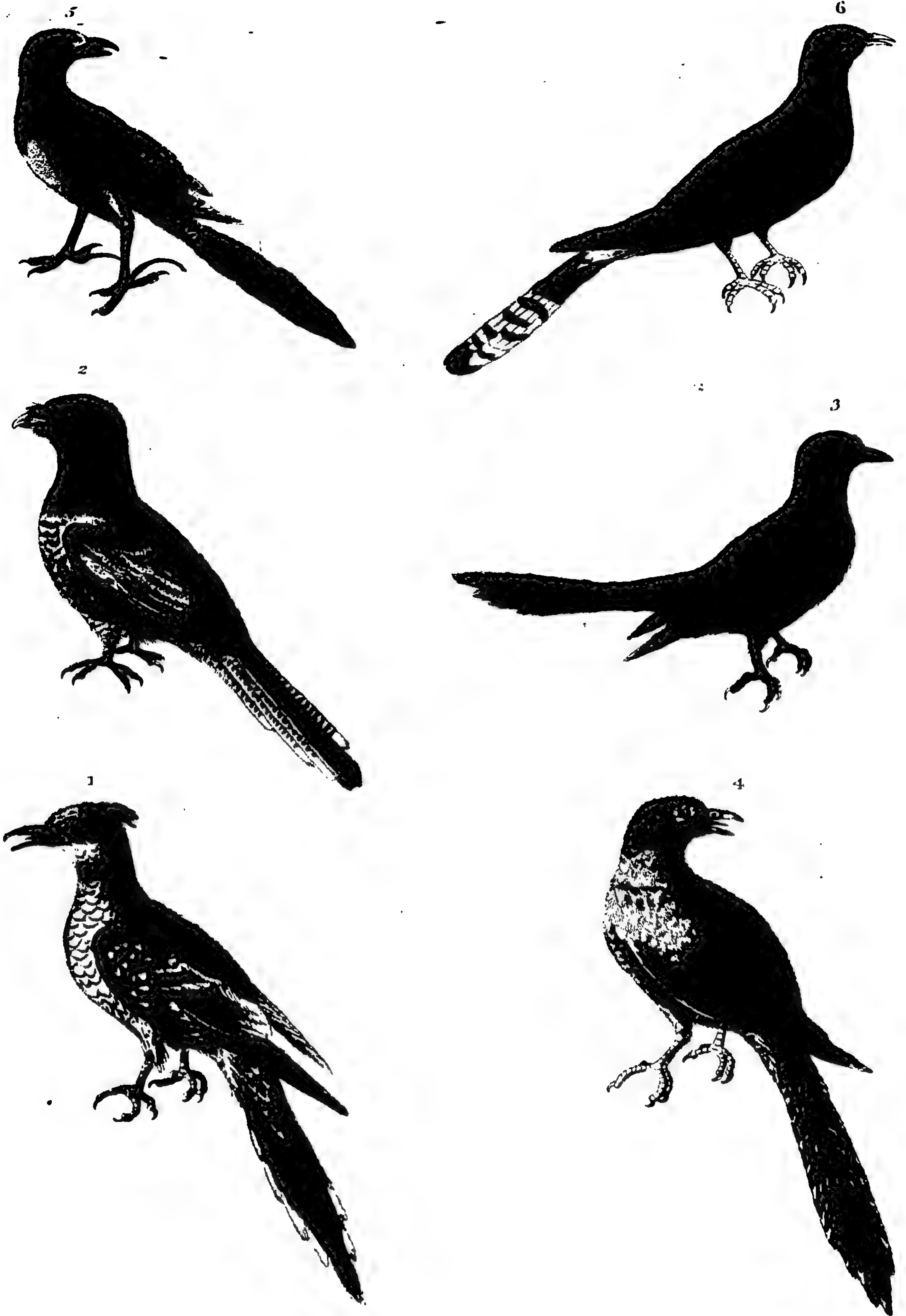
The claws and bill of the Cuckow are smaller and weaker than those of other rapacious fowls. This singular bird, which is somewhat less than the pigeon, shaped like the magpie, and of a greyish colour, is distinguished from all others by its round, prominent nostrils, on the surface of the bill. The lower part of the body is of a yellowish colour, with black transverse lines under the throat, and on the top of the breast; the head, the upper part of the body, and the wings, are beautifully marked with tawny and black transparent stripes; and on the top of the head there are a few white spots. The extremities of the feathers on the rump and the bottom of the back are white; and the inner edges of the exterior parts of the wings are painted with large transverse white spots. The tail, which is pretty long, is transversely marked with black and tawny streaks; and on the exterior edges of the feathers there are several white spots. The legs are short, and covered with feathers down to the very feet, which are weak, and yellowish; and the claws are nearly of the same colour. It has four toes, two of which are placed before, and two behind; and the mouth is large, and yellowish on the inside.

After having disappeared during the winter, the Cuckow is discovered in this country early in the spring by means of its well-known voice. It is indeed silent for some little time after its arrival; and, when it exerts its note, it is only a call to love used by the male, which is commonly perched on a dead tree, or bare bough, repeating his song, which he relinquishes as soon as the amorous season is past. The note of this bird is so uniform, that his name, in every language, seems to have been derived from it; and in all countries it is used in the same opprobrious sense. This reproach, however, probably originated from the Cuckow's making use of the nest of a different bird, in which to deposit its eggs, and leaving the care of its young to some other of the feathered tribe. A water-wagtail, or even a hedge-sparrow, generally officiates as nurse to the Cuckow's young brood; and, if they happen to be hatched at the same time with the genuine offspring, they quickly destroy them by overlaying, as their magnitude is very soon greatly superior.

From the curious voice of the Cuckow, the farmer may be instructed in the real advancement of the season. Human calculations, it is well known, are liable to much fallibility; but, as the note of this bird depends on a certain temperature of the air, it may with no small degree of propriety be counted an unerring guide.

The note of the Cuckow, though uniform, is yet pleasant; and, from an association of ideas, it recurs to the memory without putting in our mind of the sweets of that season in which nature wantons in beautiful luxuriance, the eye is gratified with the most pleasing objects, and the ear with the most delightful harmony.

When the Cuckow is sufficiently fledged, and of course prepared for flight, it does not leave its supposed parent; for, as its appetites for food increase, it cannot expect to obtain its supply by imitating its little instructor: it therefore takes a final leave of, and seldom offers any violence to, its nurse. All the little birds, however, who consider the young Cuckow as their enemy, and revenge the causes of their kind by repeated insults, compose the train of its pursuers: but the wryneck is the most active in the chase, and the



1 GREAT SPOTTED CUCKOO 2 GREEN CUCKOO 3. INDIAN BLACK CUCKOO.
4 INDIAN BROWN AND SPOTTED CUCKOO 5 LARK HEeled CUCKOO 6 LITTLE CUCKOO

hence has been considered by many as the provider and attendant of the Cuckow. Yet it is well known that this bird follows it with no amicable intention; but either to insult it, or as a spy who warns the little warblers of the impending danger.

Such are the habits of this bird while it continues in this country; but, on the approach of winter, it totally disappears, nor can its passage be traced to any other. Some imagine that the Cuckow conceals itself in hollow trees; and others, that it passes into warmer climates: but which of these suppositions is the true one, cannot be decided on, as nothing has hitherto been related on either side that amounts to a certainty. However, the most probable conjecture is, that as quails and woodcocks shift their habitations in winter, so also does the Cuckow; but whether it retires to rest, or whether any person has ever observed the course which it steers, we are totally at a loss to determine.

Some authors have questioned whether Cuckows are carnivorous birds; but Reaumur, who bred up several of them, informs us, that they would not feed either on bread or corn, but that flesh and insects were their favourite aliment, though the latter seemed to be most congenial to their appetites. Their voracity, indeed, is not to be wondered at; for their stomachs are so very capacious, as to reach from their back-bones to their vents. Nevertheless, they are not to be considered as birds of prey, being destitute of the essentials for that purpose, namely, strength and courage: but that they are naturally weak and timid, appears by their flying from those smaller birds by which they are always pursued.

The Cuckow measures fourteen inches in length, and twenty-five in breadth, and weighs about five ounces. The young are of a brown colour mixed with black, though in that state some authors have described them as old ones.

The Cuckow was anciently consecrated to Jupiter. That god, according to fiction, having rendered the air extremely cold, transformed himself into a Cuckow, and reposed on the bosom of Juno, who received him willingly, (a poetic figure, intimating the success of an intrigue;) and Mount Thornax, in Peloponnesus, where this adventure happened, was from that time called the Mountain of the Cuckow.

CUCKOW, GREAT SPOTTED. This bird, which is supposed to be an alternate inhabitant of the southern parts of Europe and the northern parts of Africa, has a pretty strong black bill, somewhat long in proportion to its thickness, and a little incurvated downwards; the lower mandible being slightly angulated underneath. A black line is extended backwards from the angles of the mouth to the hinder part of the head, narrowest at the extremes, and broadest in the middle, in which the eyes are placed; the crown of the head is covered with soft feathers of a blueish ash-colour, which, from their length and looseness, exhibit the appearance of a crest; the whole upper side of the neck, the back, wings, and tail, are covered with dark brown feathers, the greatest quills and tails being the darkest, and approaching to black. All the wing-feathers, except the greater quills, are tipped with white and very light ash-colour, as well as the upper covert-feathers of the tail. The two middle feathers of the tail are wholly dark; and all the side feathers, as they gradually shorten in length, increase in the depth of their white tips. The under-side, from the sides of the head and

throat to the breast, is of a pretty bright brown; inclining to orange; which colour gradually changes on the belly and thighs to a dirty yellowish brown, and ends in the coverts beneath the tail. The insides of the wings and under-side of the tail are of an ash-colour; the legs are short in proportion; two of the toes stand forward, and two backward; the claws are pretty strong, and black; and both legs and feet are covered with black scales.

CUCKOW, INDIAN BLACK: This bird is about the size of the English blackbird; the bill is thicker and stronger than in some of the kind, and of a bright orange colour; the sides of the upper mandible, when they fall over the nether, do not run in a straight line, but in a wave; the head, body, wings, and tail, are wholly covered with deep black feathers, without one mark or spot of other colours; notwithstanding which, they possess such a shining lustre, that, on being exposed to different lights, they reflect by turns all the various colours of the rainbow. The middle feathers of the tail are pretty long, but the side ones become gradually shorter; both the tail and the wings are pretty long; and the legs, feet, and claws, are short, thick, and strong.

Edwards remarks, that as it is not easy to define how a bird which sometimes appears entirely black, should on a little turn assume shining colours, though no such are placed near it to be reflected back, he imagines that these feathers must have in their composition some transparent, triangular fibres, which operate on the eye in the manner of a prism.

CUCKOW, INDIAN BROWN AND SPOTTED. This species is about the size of the thrush, but the body is longer in proportion to its magnitude; the head is large, and the tail very long; the bill is pretty strong and thick for this tribe of birds, and of a dirty yellow inclining to green; the head, the neck, the whole body, the wings, and the tail, are of a brown colour, spotted and barred throughout with a lighter brown or white; the head, wings, and back, are darker than the under side, spotted and intermixed with a lighter brown; though, on the lesser coverts of the wings, there are some white spots. The breast, belly, thighs, and covert-feathers under the tail, have a great proportion of white a little mixed with orange colour; and all the under-side is confusedly covered with semilunar black spots. The legs are short, and yellowish; the feet are of the same colour; two of the toes stand backwards, and two forwards; and the claws are dusky.

As this bird strongly resembles the common Cuckow, it may be inferred by superficial observers of nature, that they are in fact the same; but it will be proper to remark that they disagree in several essentials: it is less by one-third; the colours on the belly and under-side are very different; and the legs correspond only in their proportionable shortness. This species is a native of Bengal; and, in the language of that country, is called bought-fallic.

CUCKOW, GREEN. The bill of this species is thick and short; the edges of the upper mandible are a little waved; the colour is yellow; and, from the base both of the upper and lower mandible, proceed some stiff black hairs, projecting forwards, so as to cover the nostrils. The space round the eyes, and about an inch down the throat, is covered with black feathers; the top of the head, the neck, back, rump, and lesser covert-feathers of the

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wings, are of a most splendid green, reflecting blue and gold colours; but the fore-part of the neck is of a very blue green. The wings, externally, are of a light ash-colour, with very minute transverse, irregular lines, of dusky or black; the tips of the quills are wholly dusky; the insides of the wings are of a dark ash-colour; and the inner webs of the quills are white at their bases. The tail is composed of twelve feathers, long in the middle, and gradually shortening towards the sides; the six middle feathers are externally green, with black tips, and internally of a dark ash-colour; and the exterior feathers on each side are white above and beneath, with narrow transverse lines of black running their whole lengths, except that their tips are entirely white. The breast, belly, and covert-feathers beneath the tail, are of a fine full orange or gold-colour; the thighs and legs, which are invested with short feathers down to the feet, are of a light ash-colour, with transverse lines of black; and the feet and claws are brownish.

This bird seems to be the same with the curucui of Marcgrave; whose description nearly agrees with the above, except that he makes the under side of a vermilion colour.

CUCKOW, LARK-HEELED. This species is somewhat larger than the lark; the bill is dusky; the head, neck, back, and coverts of the wings, are ferruginous, marked with short lines of white bounded by black; the belly is a yellowish brown; the first and second primaries being of a reddish brown, and the rest barred with black. The tail is very long; the exterior feathers are dusky, tipped with brown; and the rest are marked with black and brown bars. The legs are black; and the interior toe behind is furnished with a very long straight claw, after the manner of the lark. This bird is a native of Bengal.

CUCKOW, SPECKLED, OF SONNERAT. This species is twice as large as the European Cuckow. The upper part of the body and the wings are of a very deep brown colour, marked with yellowish red spots, each of which is of an oblong figure on the head, and round on the neck, the back, and the lesser coverts of the wings; and the greater coverts are barred transversely with yellow intermixed with some black specks. The throat is black, and speckled like the back; the belly and breast are of a bright reddish colour, transversely barred with black; the tail is long, the feathers which compose it being of an equal length, and of a yellowish red colour barred with black; the irides are reddish; the bill is black; and the feet are of the colour of lead.

CUCKOW, LITTLE, OF SONNERAT. The upper part of the head of this species is of a bright grey colour; the neck behind, the back, and the wings, are of an umbre hue; the throat is a shining grey; the belly is a bright yellowish red; the tail is black above, and barred transversely below with white and black; and the feet and bill are a bright yellow, except that the latter is blackish at the point. This bird and the preceding, which are natives of the isle of Panay, were first described by Sonnerat.

CUCULUS INDICATOR. A bird supposed to be of the cuckow kind, found in the interior parts of Africa, at a great distance from the Cape of Good Hope, and called by the Dutch settlers honig-wyzer, or honey-guide. It is considerably smaller than the common cuckow; and is very remarkable on account of it's conducting those persons who observe it's motions to wild bee-

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hives, by means of a shrill-sounding note resembling Cherr, Cherr. The natives answer this note by a soft whistle; and the bird repeats it's call till it arrives at the hives.

CUCULLUS. A genus of shells of the voluta kind, called by some authors the corner-shells.

CUCURI. A Brazilian fish of the shark kind, but not very mischievous. It is called casson by the Portuguese; and is about two feet and a half long. The head ends in a hyperbolic figure; the mouth is placed in a very singular manner; it has only one row of very small teeth; the eyes are pretty large; and the belly is of a silvery white colour.

CUCURUCU. An American serpent of an enormous size, being frequently ten or twelve feet long. It is of a yellowish colour, strongly variegated with irregular black spots. This reptile, which is extremely venomous, is greatly dreaded by the natives; but it's flesh is very delicious, and highly esteemed.

CUGNACUARANA. An American beast of prey, usually confounded with the tiger; and described by Marcgrave as one of the three species of American tigers, the jaguara and jaguarete being the two others. Those two animals are evidently of the lynx or leopard kind rather than the tiger; and this creature is probably as little related to the tiger as they are. However, it is a large and very fierce animal, of the shape of the jaguara, and of a pale tawny colour, but a little duskier on the back than on the sides. The hair is very short; and under the chin, and on the belly, there is a small portion of white.

CUGUACUETE and CUGUACUAPARA. Brazilian animals of the caprea kind, which appear to be male and female of the same species, and not distinct animals. The former is destitute of horns, and is probably the female. The latter has horns composed of three branches; one of which springs forth near the insertion, and from this they run up single to the extremity, where they are bifid.

Johnson has figured this animal under the name of the capreolus marinus. A pair of horns belonging to this curious animal is preserved in the British Museum.

CUGUPUGUACU. A very large Brazilian fish, sometimes measuring six feet in length. The head and mouth are large, the last being destitute of teeth; and the eyes are of a middle size, with yellow irides. The tail-fin is almost square; and the scales are small. The whole head, back, and sides, are of an ash-colour mixed with umbre; but, towards the back, the tints become deeper. The belly is whitish; and all the fins, together with the tail, are a light brown. The whole head, back, and sides, are beautifully sprinkled with small black spots; but the belly and fins are of one uniform colour.

CUIRIRI. A Brazilian bird of the starling kind, strongly resembling the common starling, and only differing from the pitanguaguacu in having a yellow spot on it's head; hence many have concluded it to be the male of that species.

CULEX. The name of a genus of two-winged flies, comprehending gnats, and humble-bee flies; the distinguishing characteristic of which is, that the head is furnished with a syphon, or sucker, very slender, oblong, and filiform.

CUNEI. A term sometimes applicable to such tellinæ as have one side of the shell much more extended than the other.

CUNICULUS.

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CUNICULUS. A genus of animals of the *lepus* or hare kind; in English, the rabbit.

CUNICULUS AMERICANUS. A name given by some authors to the animal called *tapeti*, a small species of rabbit.

CUNICULUS BRAZILIENSIS. A species of rabbit called also *aperea*.

CUNICULUS SIBERICUS. The long-tailed Siberian rabbit, the fur of which is highly esteemed. During the summer months, many of these creatures are beautifully variegated with oblique and transverse streaks of black and grey.

CURASSO BIRD. This bird is nearly as large as a hen turkey. Its bill is black at the point, and covered at the basis with a yellow skin; above the bill, between the nostrils, there is a round hard knob of a yellow colour; and on the head there is a crest of long black feathers, which project forwards at the points. The whole bird is of a deep shining black colour, reflecting blue and purple shades, except the lower part of the belly and the covert-feathers under the tail; and the legs and feet are covered with a scaly skin of a dark flesh-colour.

Sloane, in his *History of Jamaica*, calls this bird the *gallus Indicus*.

CURCULIO. A genus of beetles, distinguished by having the antennæ affixed to an elongated corneous snout. See *SCARABÆUS*.

CUR-DOG. This variety of the canine race, called also the house-dog, is about the size of a fox, with upright ears, and a sort of woolly hair under the tail. But such various breeds often propagate together, and produce a mongrel tribe, that it is impossible to discriminate the different species of this genus with any degree of accuracy.

CUREMA. A fish of the mullet kind, which grows to the length of two feet. It has a very large moveable upper lip; but the under one is small, of a triangular figure, and scarcely visible on account of its extraordinary minuteness. The eyes are large; and the fins are of a fine silvery white colour. In other respects, it resembles the common mullet.

CURICACA. A Brazilian bird, called *masarino* by the Portuguese. It is nearly as large as the goose, but resembles the curlew in its shape. The beak is upwards of four inches in length; the neck and back are covered with white and yellow feathers; and the whole body is black, except that the back, the head, and the lower parts of the belly, have a greyish cast. There is another species of the *Curicaca*, but distinguishable from the former only by the smallness of its size.

CURIMATA. A name given by some authors to the *lavaretus*.

CURLEW. A sea-fowl, called also *arquata* and *numenius*, which frequents the coasts during the winter season; and retires, at the approach of spring, to the mountains, for the purpose of fecundation.

The Curlew weighs about twenty-seven ounces; its length, from the top of the bill to the end of the claws, is twenty-nine inches, but to the end of the tail only twenty-three inches and a half; the expansion of the wings is three feet four inches; the bill is near six inches long, a little crooked, and of a dark brown colour; the tongue is short; the legs are long, bare, and of a dusky hue; and there is a thick membrane which reaches to the first joint. The colour is diversified with ash and black, and the flesh is esteemed very delicate by some, while others consider it as rank and fishy.

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CURLEW, LESSER. This species, which is sometimes called the *whimbrel*, resembles the former in every generic circumstance except its size. Its length, from the tip of the bill to the extremity of the tail, is seventeen inches; and its greatest expansion is thirty-three inches and a half. Its bill is three inches long; and its weight is twelve ounces. The top of the head is of a dark brown colour, without any spots; the back, as far as it is covered with the wings, is white, in which circumstance it differs from the common Curlew; and the legs are greenish.

CURLEW, LITTLE. The bill of this bird is black; the neck and belly are grey; the wings, which are mottled with white and brown, have three large black feathers on each; and the feet, below the knees, are of a dun ash-colour.

CURLEW, STONE. The bill of this bird is straight, two inches long, black towards the nostrils, and yellow at the point; and the expansion of the wings is three feet. Under each of the eyes, which are yellow, there is a bare space, of a yellowish green. The breast, thighs, and chin, are a yellowish white; the middle of the back, the head, and the neck, are black, margined with a reddish ash-colour; on the quill-feathers there are transverse white spots; and some of the wing-feathers, which are tipped with white, exhibit a very beautiful mottled appearance. The tail, which is about six inches long, is variegated like the wings; the legs are long, and of a yellowish colour; and the claws are small and black. This bird has no hind-toe; and those before are united by a small membrane. It is a native of several English counties, particularly Norfolk; and is remarkable for its piercing, shrill note, which it puts forth in the evening. It lays two eggs of a copper colour; it feeds on worms and caterpillars; and its flesh is very delicious.

CURLEW, BROWN, OF SONNERAT. This species is about the size of the European Curlew. The plumage is of a reddish brown; the eyes are surrounded with a naked greenish skin; the bill is likewise of a greenish hue; the feet are red; and the irides are of a lively scarlet colour. It is a native of the isle of Luçon.

CURLEW, SPECKLED, OF SONNERAT. This curious bird is considerably larger than the common Curlew. The top of the head is black; the head, neck, and breast, are white, beautifully marked with longitudinal white bars; the belly is adorned with transverse and semicircular black bars; the lesser coverts of the wings and the back are of an umbre colour, having several white spots on their margins; the larger coverts of the wings are wholly black; and the tail is a pale grey, cut by black transversal lines. This species likewise inhabits the isle of Luçon.

CURTILIA. An appellation given by some naturalists to the *corvus sylvaticus* of Gesner.

CURVATAPINIMA. A name sometimes given to the fish more usually known under that of *bonito*.

CURUCUI. A bird of the wood-pecker kind, found in Brazil. The bill is short, broad, and of a sulphur colour; the irides are of a golden hue; and the legs, which are short, are covered with feathers almost to the feet. The whole breast and lower belly are of a beautiful red; the upper part of the back and the tail are of a shining green, with a varying gloss; the edges of the tail are black; and the feathers underneath are white, elegantly

gantly striped transversely with black; and the wings are of various colours, green at their beginnings, whitish in their centres, and blackish at their extremities.

CURUCU, SPOTTED. This bird is of the size of the nut-hatch; the bill is brown; the crown of the head is a deep green; the neck, breast, and belly, are a pale brown barred with dusky; the edges of the wings are white; the coverts and secondaries are green tipped with white; and the tail is dusky, barred with white. This little animal is a native of the isle of Ceylon.

CURVICAUDA. A species of bee-fly very common in England, extremely troublesome to horses, and vulgarly known by the name of wriggle-tail.

CURURUCA. An American fresh-water fish of an oblong figure. It grows to the length of a foot and a half, has a remarkably large mouth, and its flesh is esteemed agreeable food.

CUSHEW-BIRD. This bird so greatly resembles the curassow, that some naturalists have entertained an opinion that they are of the same species. The Cushew-Bird derives its name from the knob over its bill, in shape like the American Cushewnut; which knob, together with the basis of the upper mandible, are of a fine blue colour; the rest of the bill is red; and the eyes have reddish brown irides. The whole upper part is a deep glossy black, reflecting different hues, according to the position of the bird and the rays of light falling on the eyes of the spectator. The lower part of the belly, the covert-feathers under the tail, and the tips of the tail-feathers, are white; and the legs and feet are covered with a scaly skin of a dark flesh-colour. The Cushew-Bird appears to be the same with the pauxi of Nieeremberg.

CUSI. The Philippine name of a very small and beautiful species of parrot.

CUTHBERT DUCK. A particular species of aquatic fowl.

CUTTLE-FISH. A genus of sea insects of the gymnarthria kind, called also the Ink-fish.

The Cuttle-Fish, which is of an oblong shape, is about six inches in length, and three and a half in breadth. The body is somewhat oval; but it is broadest near the head, and grows smaller towards the extremity, where it is obtusely pointed. The back is covered with a shell as large as a man's hand, about an inch thick in the middle, but more slender on the sides: this shell, which is hard above, but very spongy and brittle below, is of a whitish colour, and is used for a variety of well-known purposes. Under the throat there is a vessel or bladder containing a fluid blacker than ink, which the Cuttle-Fish, when pursued by its enemies, ejects in considerable quantities; and this darkening the water all around, enables the animal to escape with facility. There are two sorts of legs joined to the head of this fish, which assist it in swimming, and conveying its food to its mouth; the two shortest, which are in the middle, are serrated on their insides; next to them there are two long ones, one on each side; and the six remaining ones are of a pyramidal figure, and generally turned backwards. This animal, which feeds on small fish, is found on many of the European shores, particularly the Mediterranean; and its flesh is esteemed salubrious and pleasant.

The bone of the Cuttle-Fish is rough and absterfve, and chiefly used in medicine as a dentifrice: it is hard on one side; but so very soft on the

other, as to receive neat impressions from medals, and to serve as a mould for casting metals, which thus take the figure of the original; and it is also used in the polishing and cleaning of silver.

CUT-WATER. This bird, which is described by Catesby as a species of gull, is black from the middle of the head to the tail; but the legs, and part of the bill, are red. The bill is very irregular, the under mandible being nearly two inches longer than the upper; and it is almost as strong and sharp as the blade of a case-knife.

CYCLOPTERUS. A genus of branchiostegious fishes; the distinguishing characters of which are, that the branchiostege membrane on each side contains six small cylindric bones; that the body is of an oblong, globose figure; that the belly-fins unite at their extremities, so as to form one regular fin of the shape of a funnel; and that the fins are six in number. The only species yet discovered of this curious genus is the sea-owl.

The above appellation is derived from Kuklos, a Circle; and Pteron, a Wing. In the Linnæan system, this constitutes a genus of the nantes amphibia.

CYGNUS CUCULLATUS. A name improperly given by some naturalists to the duck, a very large bird approaching to the cassowary kind, but weaker in the legs and neck.

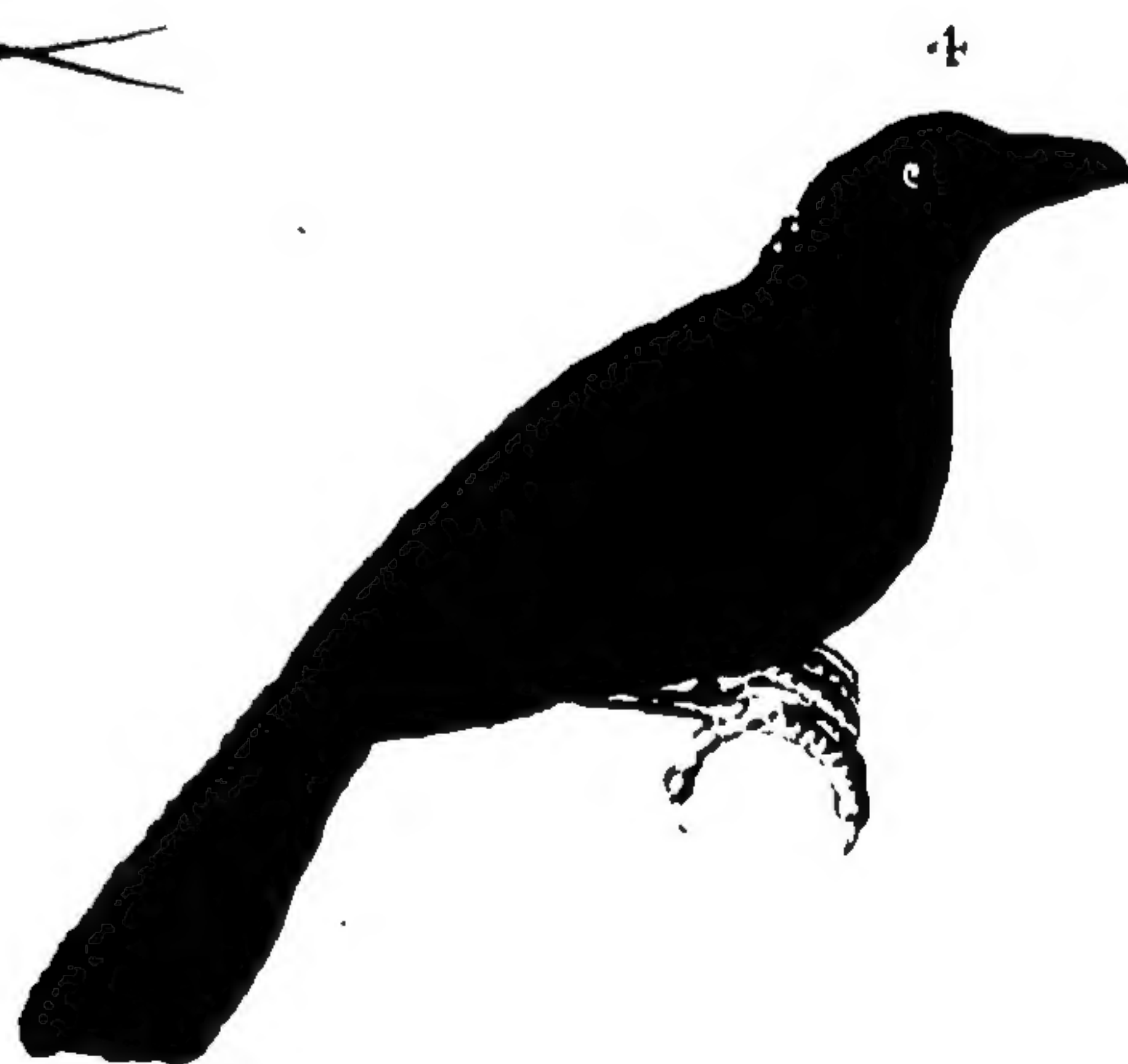
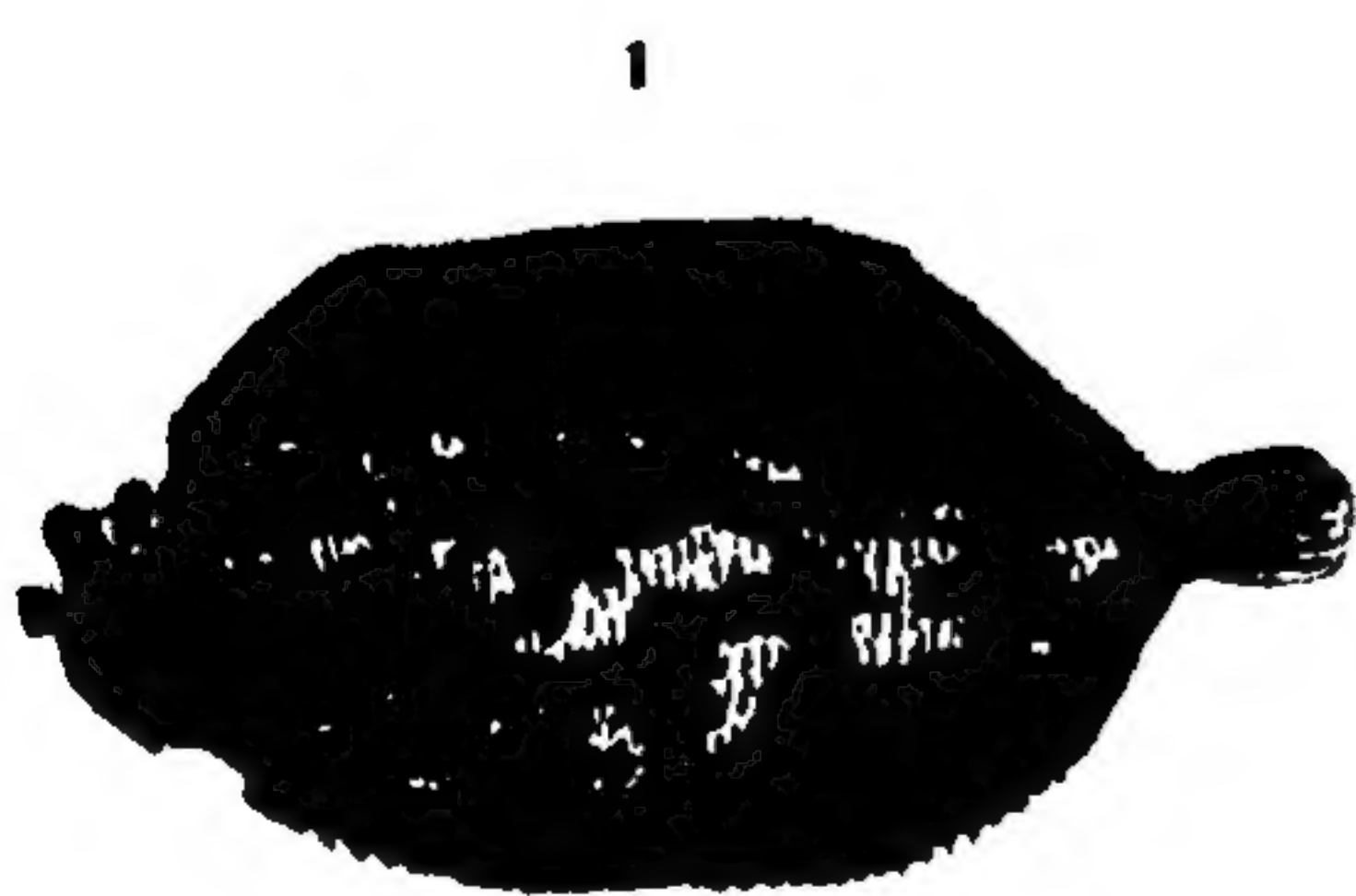
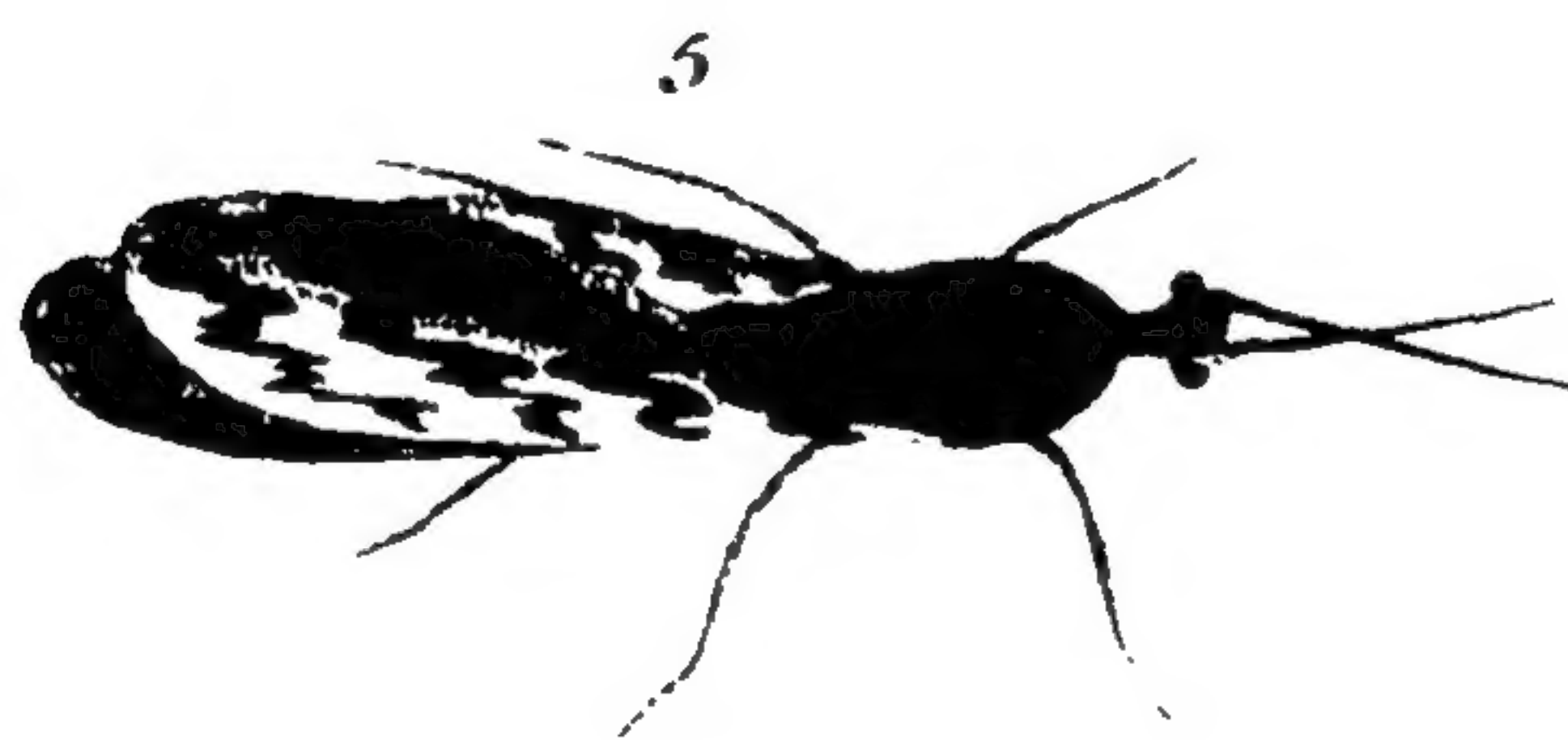
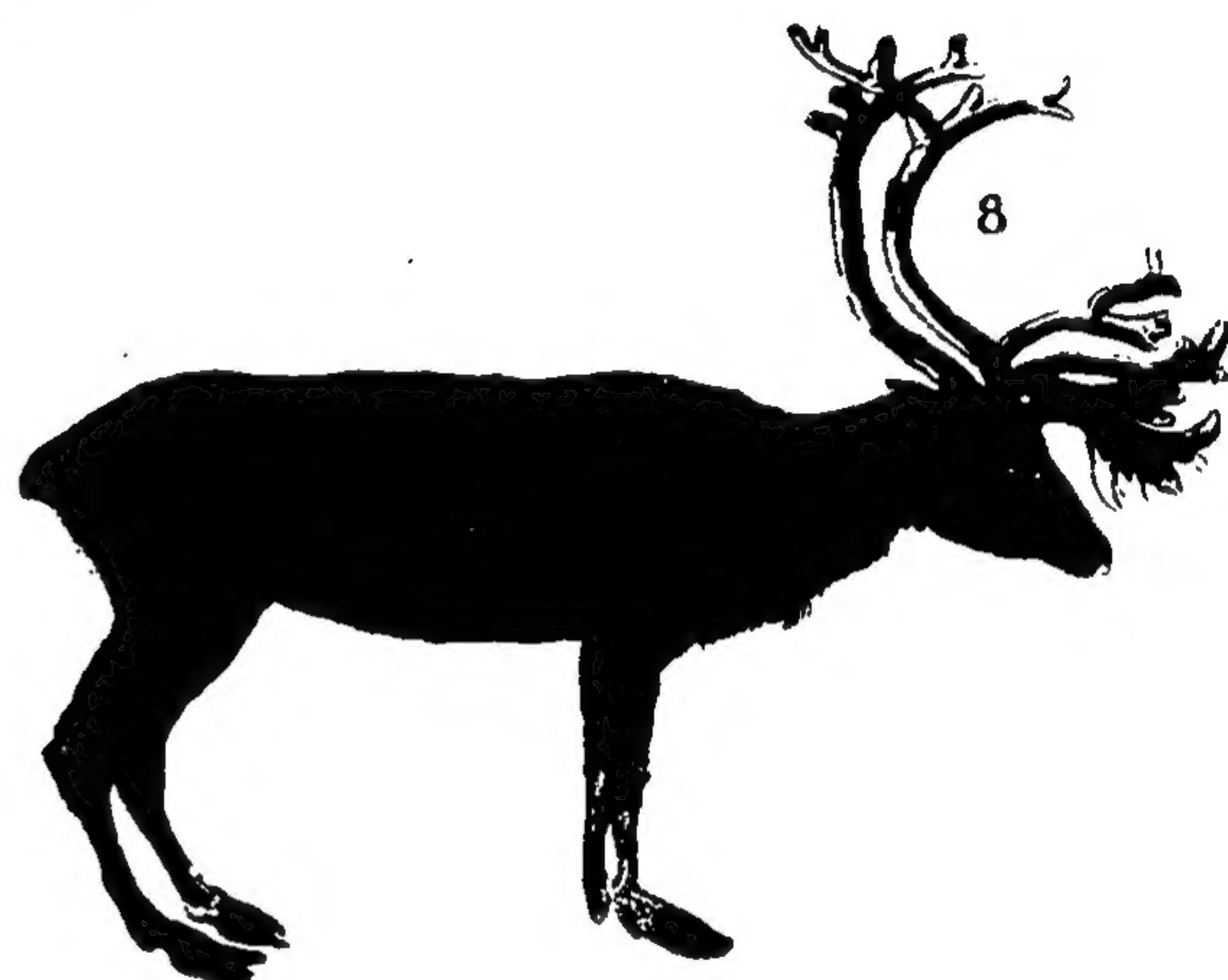
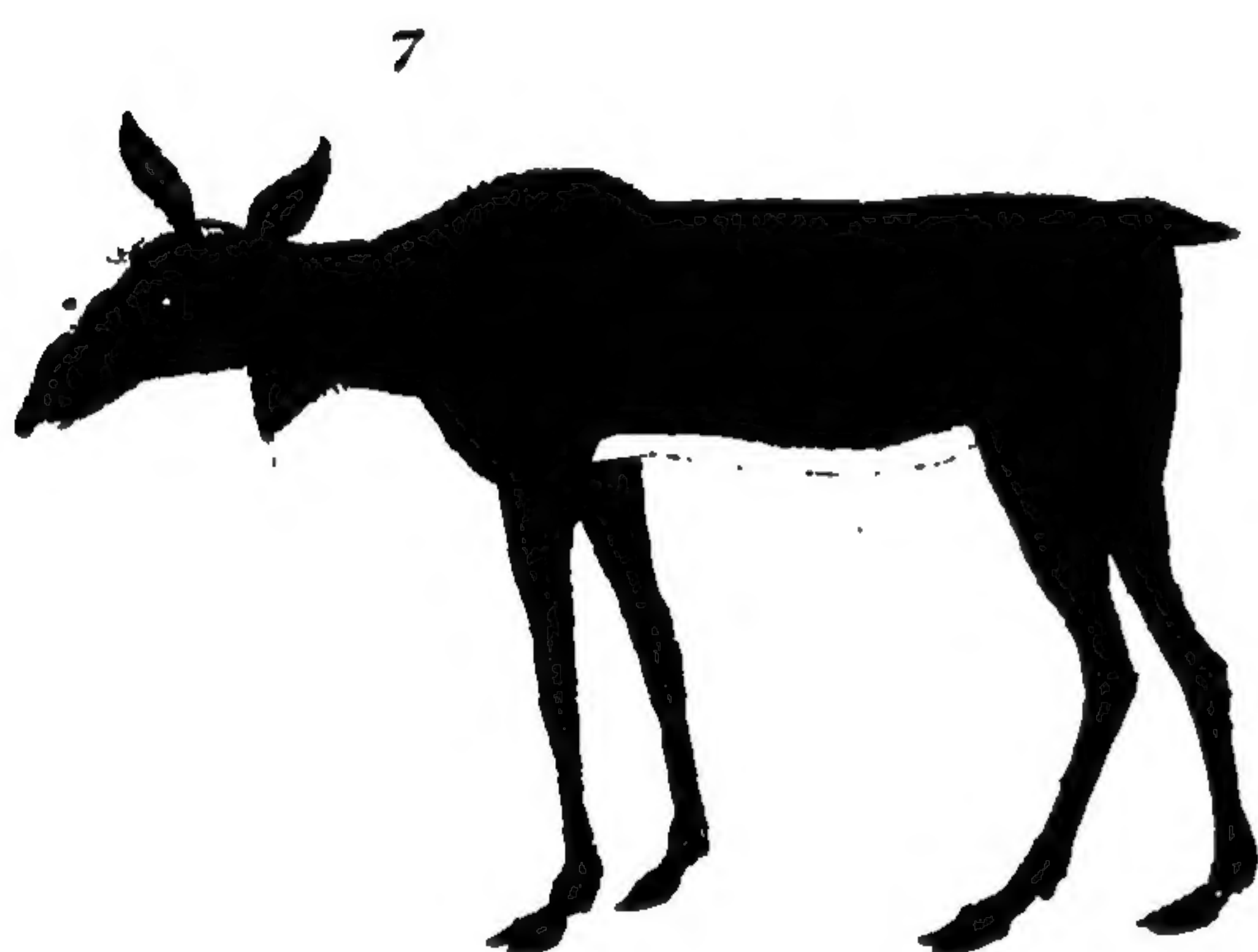
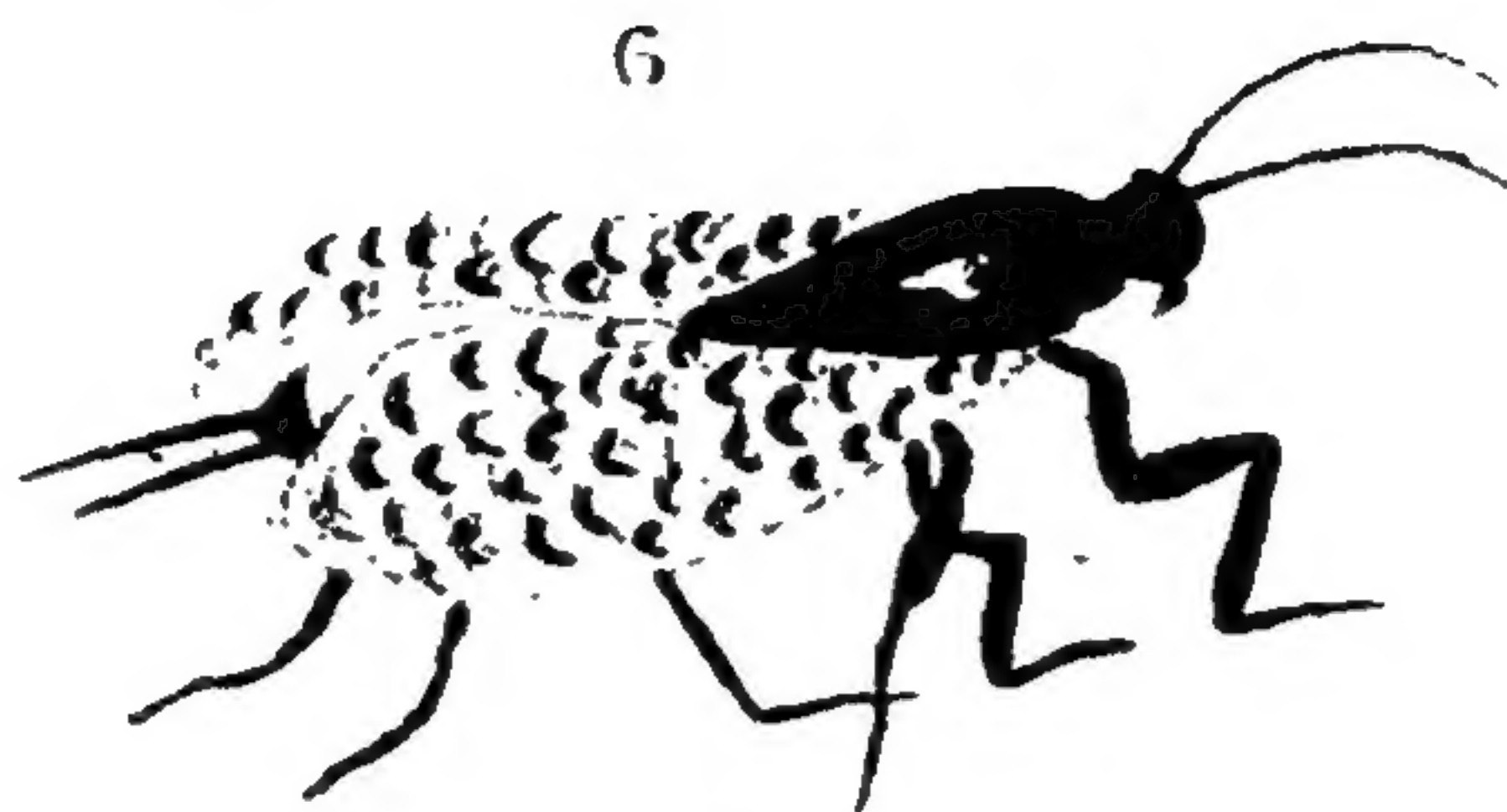
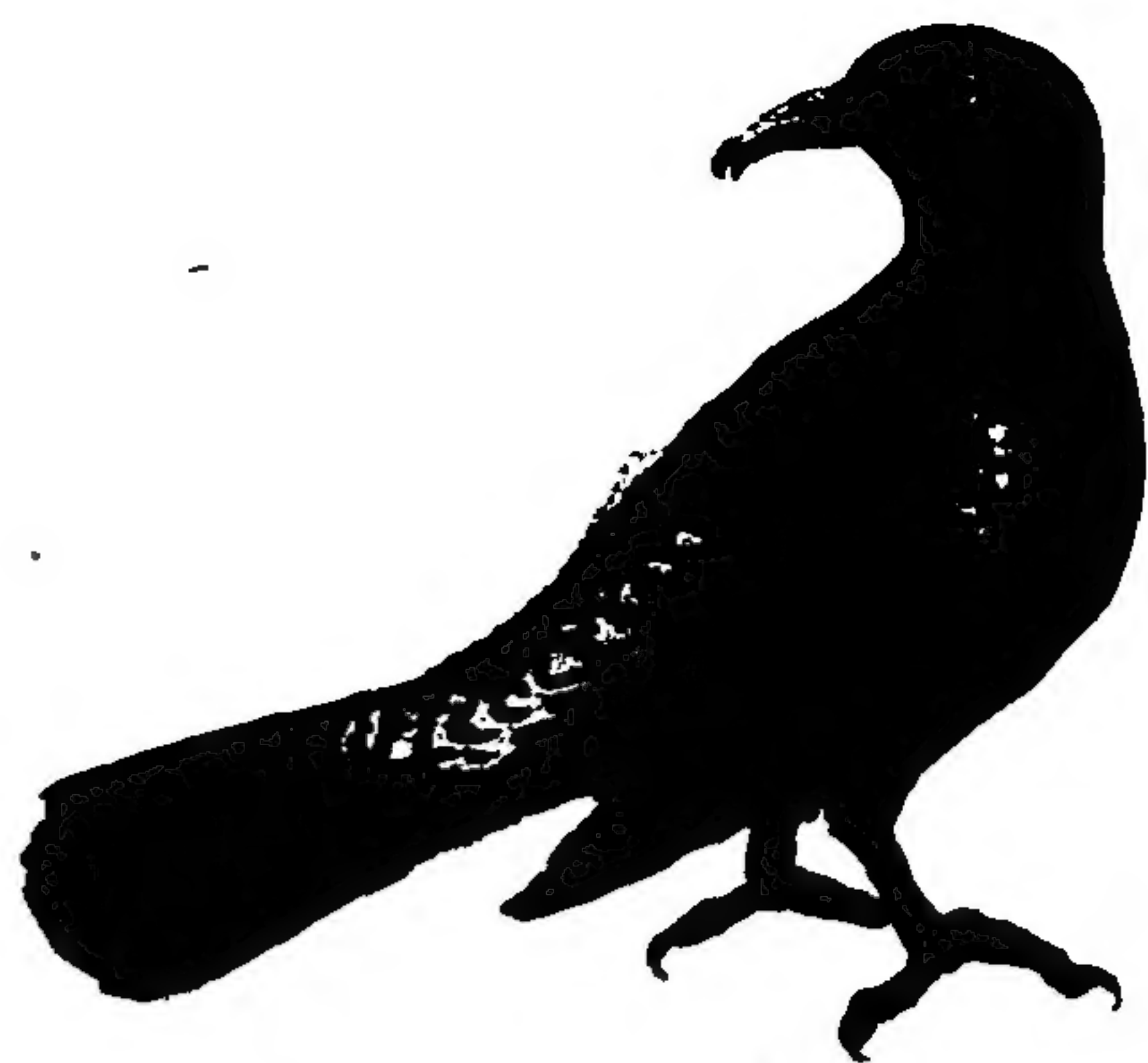
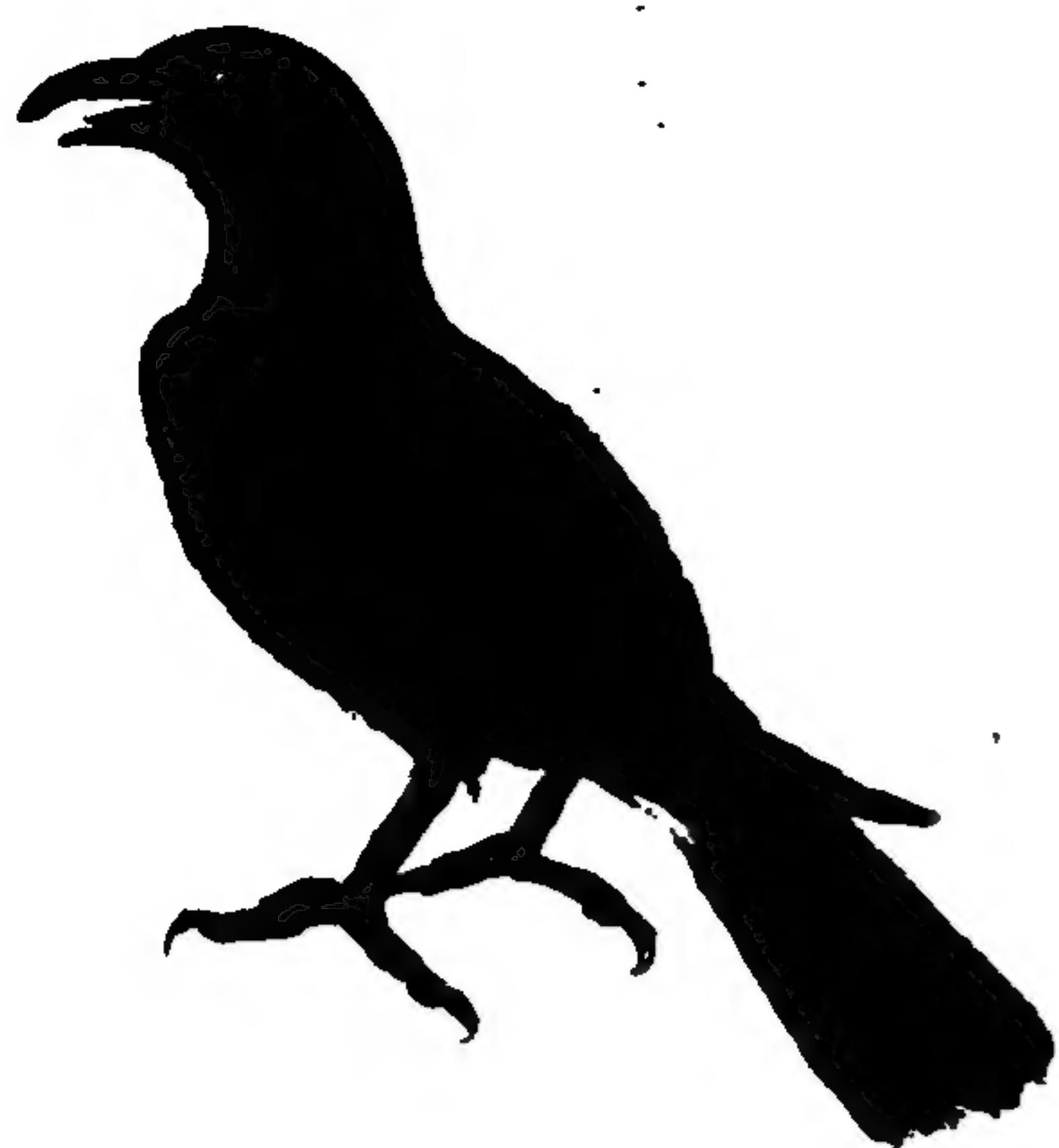
CYLINDRUS. A genus of shell-fish of which there are many very elegant and valuable species. This genus, however, is more usually known at present under the name of rhombus; though with less propriety, as the word Cylindrus very aptly expresses the shape of the shell, which is cylindric and oblong; while the rhombus refers to a lozenge, which by no means conveys any idea of the real figure.

The shells of this genus are univalve, of an oblong, cylindric figure, having oblong mouths, and frequently the clavicles separated from the bodies by circles; and the columella is in some species smooth, and in others rough. But the most obvious distinct on of this genus, without having recourse to the formation of the mouth, is, that in all the species, both ends of the shell are nearly of the same size, though the tail-part is certainly somewhat smaller than the head. The head is not separated from the body by an elevated rib, as in the volutæ, but follows the shape of the body, though sometimes it is divided by a dentated furrow; and in some, but very few species, by a prominent circle. This character, which brings the Cylindri nearly in alliance with the volutæ, renders the distinction the more difficult; but, in this case, the extremity of the shell must be regarded, which in the Cylindrus is always obtuse, and in the voluta as invariably pointed. The family of the Cylindri are very numerous.

CYMBIUM. An appellation given by many conchologists to a kind of sea-shell, called also the gondola shell. It is a genus of the concha globosa, or dolium, and comprehends several species.

CYNIPS. A genus of four-winged insects of the hymenoptera kind, having a spiral sting which is generally concealed, and being destitute of a proboscis.

CYNOCEPHALUS. A name given by some naturalists to an animal of the monkey kind, the magot of Buffon. It has no tail, but only a small protuberance at the place of insertion. The face, which is prominent, bears some resemblance to that of the dog, the body is covered with a brownish



1. SMEAR-TAIL 2. BLACK AND YELLOW JAY 3. BLUE AND GREEN JAY 4. SURINAM JAY
5. ROCK DAY FLY 6. WHITE-WINGED DAY FLY 7. FEMALE MOOSE DEER 8. REIN-DEER

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hair, except on the belly, where it is yellowish; and the rump is large, callous, and red. This animal grows to the height of three or four feet, and is a native of most parts of Africa and the East.

CYNOGLOSSUS. A fish common in the Mediterranean seas. It very much resembles the foal, but its flesh is neither so delicate nor so well-flavoured.

CYNOGLUCOS. An appellation given by the ancients to an animal partaking of the shape both of the dog and the wolf, and supposed to be generated between these two creatures.

CYNOMUIA. The classical name of the dog-fly. See **DOG-FLY**.

CYPRÆA. A genus of univalves, called also porcellana, or cowries; and sometimes venerea, from their being peculiarly dedicated to Venus, who was said to have endowed a shell of this kind with the powers of a remora, so as to impede the course of the ship which was sent by Periander, the tyrant of Corinth, with orders for the castration of the young nobility of Corcyra.

Shells of the *Cypræa* genus are generally semi-oval, having their mouths placed in their flat part; their spires are not externally visible, the revolutions being performed within the body of the shell; the aperture, or mouth, is a narrow opening, or vent, running the entire length of the shell; the lips, which are near each other, are broad, turning inwards, and serrated; and the two ends or extremes on the upper-part are very prominent. At one extreme there appears a wry gutter, or opening, like the mouth of a foal; the other extreme has

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also a gutter, but perpendicularly placed; and near it, in some species, there is another protuberance, formed like a small rude clavicle or turban.

These shells are extremely numerous; and most of the species are very beautifully coloured and polished, which embellishments they receive from nature altogether unassisted by art. They are generally found round the shores of islands, in their recent or living state, in almost every country of the world.

CYPRIANUS. An Aristotelian appellation for the carp.

CYPRINUS. A very extensive genus of fishes, in the Artedean system; the characters of which are these: the branchiostegæ membrane on each side contains three bones; the whole mouth is smooth, and destitute of teeth; but, pretty low in the jaws, there are two hard and serrated bones, which supply the place of teeth, and opposite to these there is a soft oval bone corresponding with them; and the air-bladder, which appears as if tied in the middle, is thus divided into two parts.

This fish is of the malacopterygious kind; and the two jaws are usually of the same length, but sometimes the lower one is the longest. Of this genus are the barbel, bleak, bream, carp, chub, gudgeon, roach, and tench. In the Linnæan system, this is a genus of abdominales.

CYPRINUS LATUS. A name given by many authors to the common bream.

CYPRUS BIRD. A common name for the atricapilla, or black cap; a small bird very common in the isle of Cyprus, and not unusual in England. See **BLACK CAP**.

D.

DAB. A small fish of the pleuronectes kind, in the Linnæan system, called by some naturalists *passer asper* and *limanda*.

The Dab-fish, which is flat, and superior in flavour to the common plaice, though inferior in size, is covered with small scales, very rough at their extremities, as if serrated; and the eyes, which are placed on the right side, are very near each other. It is generally of an uniform brown colour on the upper side, though sometimes shaded with a darker; the lower side is white; and the lateral line is very much incurvated at the beginning, but afterwards proceeds straight to the tail. This fish, which is supposed to be in its highest perfection during the months of February, March, and April, spawns in May and June, and remains flabby and watery during the rest of the season.

DAB, SMEAR. This fish resembles the former, and its flesh is equally delicious. It grows to about a foot and a half in length, and at the widest part measures about eleven inches between fin and fin. The head is very small; the eyes are placed pretty near each other; and the mouth is filled with small teeth. The dorsal fin, which rises from the mouth, and extends within a short space of the tail, consists of seventy-nine rays; the lateral fin is much incurvated for the two first inches from its origin, and then proceeds straight to the tail. The back is covered with small smooth scales of a light brown colour, spotted obscurely with

yellow; and the belly is white, and marked with five large dusky spots.

DABUAH. An Arabian appellation for the hyæna.

DACE, or DARE. The *cyprinus leuciscus* of Linnæus. This fish resembles the chub in its shape; but is smaller and whiter, and has a less head in proportion to its body. Like the roach, it is gregarious; frequents the same places; breeds prodigiously; and is extremely vivacious, sporting with its companions during the summer season near the surface of the water in a very frolicsome manner. The head of this fish is small; the irides are of a pale yellow colour; and the body is slender, and seldom exceeds ten inches in length, though some naturalists make mention of one which weighed a pound and a half. Like the rest of the leather-mouthed fishes, it has no teeth in its jaws, but only in its throat; the back is dusky, with a cast of yellowish green; the sides and belly are silvery; the dorsal fin is dusky; the ventral, anal, and caudal fins, are red; and the tail is extremely forked.

The Dace is in the highest season during the months of April and May, but, being rather coarse and insipid, it is very little esteemed. However, it affords the expert angler great diversion; for it will bite at any fly, though it is particularly fond of the stone caddis, or May fly. Indeed, in warm weather, this fish seldom refuses a fly at the surface of the stream, but, during the cold months, the bait